PB-230 014

ILLINOIS RIVER SYSTEM - WATER QUALITY CONDITIONS. PART III. GRAPHS AND ILLUSTRATIONS

Public Health Service
Chicago, Illinois

January 1963

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Environmental Protection Agency
Region VII

REPORT

ON THE

ILLINOIS RIVER SYSTEM

WATER QUALITY CONDITIONS

Part III Graphs and Illustrations

January 1963

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Public Health Service

Division of Water Supply and Pollution Control

Great Lakes-Illincis River Basins Project

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LIST OF GRAPHS AND ILLUSTRATIONS

Chapter I No Graphs or Illustrations

Chapter II

Municipal Water Supply Data

II-1 Discharge vs. River Mile - Lower Illinois River Basin

II-2 Subdrainage Areas

II-3 Power Plants

Chapter III

Sources of Sewage Pollution

III-1 Sewage and Industrial Wastes Discharged to Illinois River System

III-2 Sources of Pollution, Municipal Wastes - Upper Illinois River System

III-3 Sources of Pollution, Municipal Wastes - Lower Illinois River System

III-4 Sources of Pollution, Municipal Wastes - Little Calumet River Complex

III-5 Sources of Pollution, Industrial Wastes - Upper Illinois River Basin

III-6 Sources of Pollution, Industrial Wastes - Lower Illinois River Basin

Chapter IV

Field Investigations

IV-1 Sampling Stations - Upper Illinois River Basin

IV-2 Stream Sampling Stations - Calumet Area

IV-3 Stream Sampling Stations - Lower Illinois River System

IV-4 Sample Collection Data Sheet

Chapter V

Physical and Chemical Investigations

V-1 Temperature Averages - Upper Illinois River Basin

V-2 Temperature Averages - Lower Illinois River Basin

V-3 pH Ranges - Upper Illinois River Basin

V-4 pH Ranges - Lower Illinois River Basin

V-5 DO Averages - April-May and June, 1961 - Upper Illinois River System

V-6 DO Averages - July and August, 1961 - Upper Illinois River System

V-7 DO Averages - January and February, 1962 - Upper Illinois River System

V-8 DO Averages - Lower Illinois River System

V-9 BOD Averages - April-May and June, 1961 - Upper Illinois River Basin

V-10 BOD Averages - July and August, 1961 - Upper Illinois River Basin

V-11 BOD Averages - January and February, 1962 - Upper Illinois River Basin

V-12 BOD Averages - Lower Illinois River System

V-13 COD Averages - Upper Illinois River System

V-14 COD Averages - Lower Illinois River System

V-15 Suspended Solids - Lower Illinois River System

V-16 Dissolved Solids - Lower Illinois River System

V-17 Omitted - Incomplete

V-18 Chloride Averages - Upper Illinois River System

V-19 Chloride Averages - Lower Illinois River System

Chapter V (Cont'd)

V-20 ABS Averages - Upper Illinois River System

V-21 ABS Averages - Lower Illinois River System

V-22 Total Phosphate Averages - Upper Illinois River System

V-23 Integrated Phosphate Loadings - Upper Illinois River System

V-24 Phosphate Averages - Lower Illinois River System

V-25 Organic and Ammonia Nitrogen Averages - Upper Illinois River Basin

V-26 Organic Nitrogen Averages - Lower Illinois River System

V-27 Ammonia Nitrogen Averages - Lower Illinois River System

V-28 NO_2 and NO_3 Nitrogen Averages - Lower Illinois River System

V-29 Toxic Metal Averages - Cu, Ni, Cd - Upper Illinois River System

V-30 Toxic Metal Averages - Zn, Cr - Upper Illinois River System

V-31 Organic Extractables

V-32 CFS Averages - Lower Illinois River System

Chapter VI

Biological Investigations

VI-1 Illinois River System

VI-2 Seasonal Variation Total Plankton Algae Counts

Chapter VII

Bacteriological Studies

VII-1 Coliform and Fecal Streptococcus Densities - Upper Illinois River System

Chapter VII (Cont'd)

VII-2 Coliform and Fecal Streptococcus Densities - Calumet Drainage Basin

VII-3 Coliform Densities - Lower Illinois River System

VII-4 Fecal Streptococcus Densities - Lower Illinois River System

Chapter VIII

Special Studies

VIII-1 BOD and SS Values at Inshore and Offshore Stations - July, 1961

VIII-2 Combined Sewer Overflows

VIII-3 Combined Sewer Overflows Location Map

VIII-4 Combined Sewer Overflows - Roscoe Street Sewer Diversion Chamber

VIII-5 Combined Sewer Overflows - Roscoe Street Sewer Dry Weather Flows

VIII-6 Roscoe Street Sewer Storm Water Overflow - Storm November 15-16, 1961

VIII-7 Storm Water Overflow Study - Roscoe Street Sewer BOD Concentration

VIII-8 Sludge Deposits - Upper Illinois Waterway

Chapter IX

The Impact of Waste Loads on the Stream

IX-1 Integration of Pollution Loads April-May, 1961 - Upper Illinois River Basin

IX-2 Measured Dissolved Oxygen - April-May, 1961 - Upper Illinois River Basin

IX-3 Integration of Pollution Loads - July, 1961 - Upper Illinois River Basin

Chapter IX (Cont'd)

IX-4 Measured Dissolved Oxygen - July, 1961 - Upper Illinois River Basin

IX-5 Integration of Pollution Loads - August, 1961 - Upper Illinois River Basin

IX-6 Measured Dissolved Oxygen - August, 1961 - Upper Illinois River Basin

Chapter X

No Graphs or Illustrations

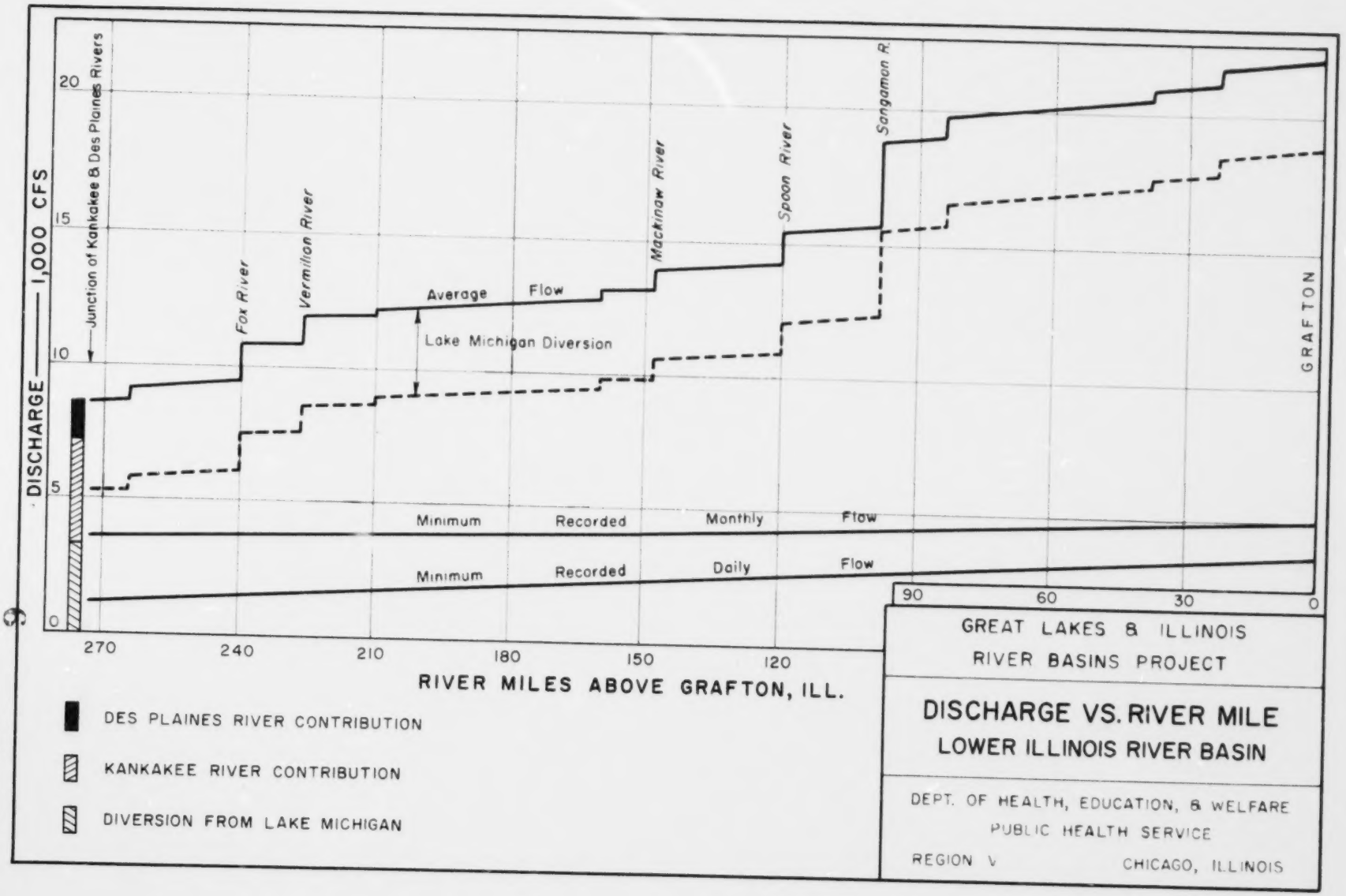
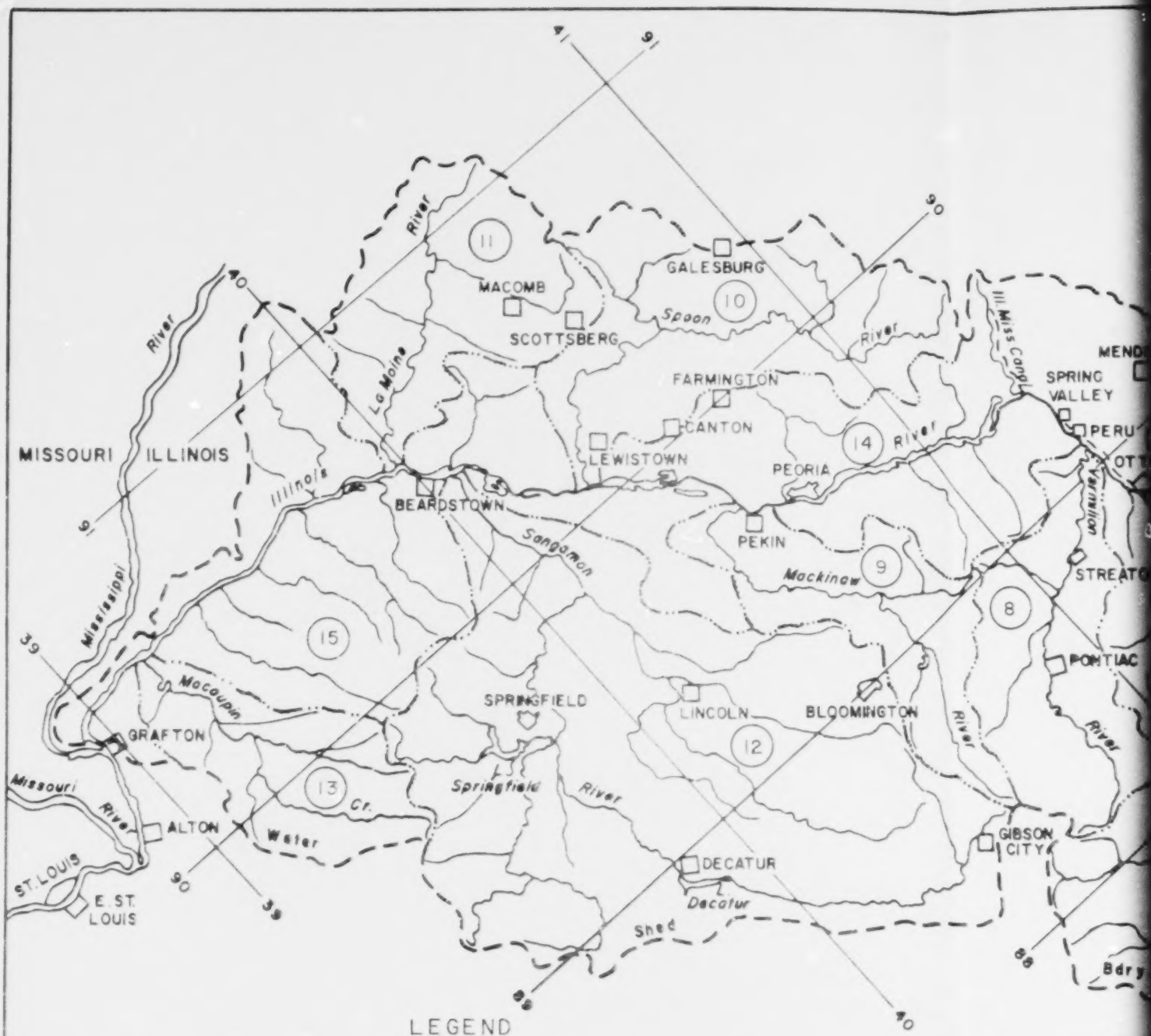

DISCHARGE — 1,000 CFS
20
15
10
5
0
Junction of Kankakee & Des Plaines Rivers
Fox River
Vermilion River
Mackinaw River
Spoon River
Sangamon R.
GRAFTON
Average Flow
Lake Michigan Diversion
Minimum Recorded Monthly Flow
Minimum Recorded Daily Flow
270
240
210
180
150
120
90
60
30
0
RIVER MILES ABOVE GRAFTON, ILL.
DES PLAINES RIVER CONTRIBUTION
KANKAKEE RIVER CONTRIBUTION
DIVERSION FROM LAKE MICHIGAN
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT
DISCHARGE VS. RIVER MILE
LOWER ILLINOIS RIVER BASIN
DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V
CHICAGO, ILLINOIS

FIGURE II-1



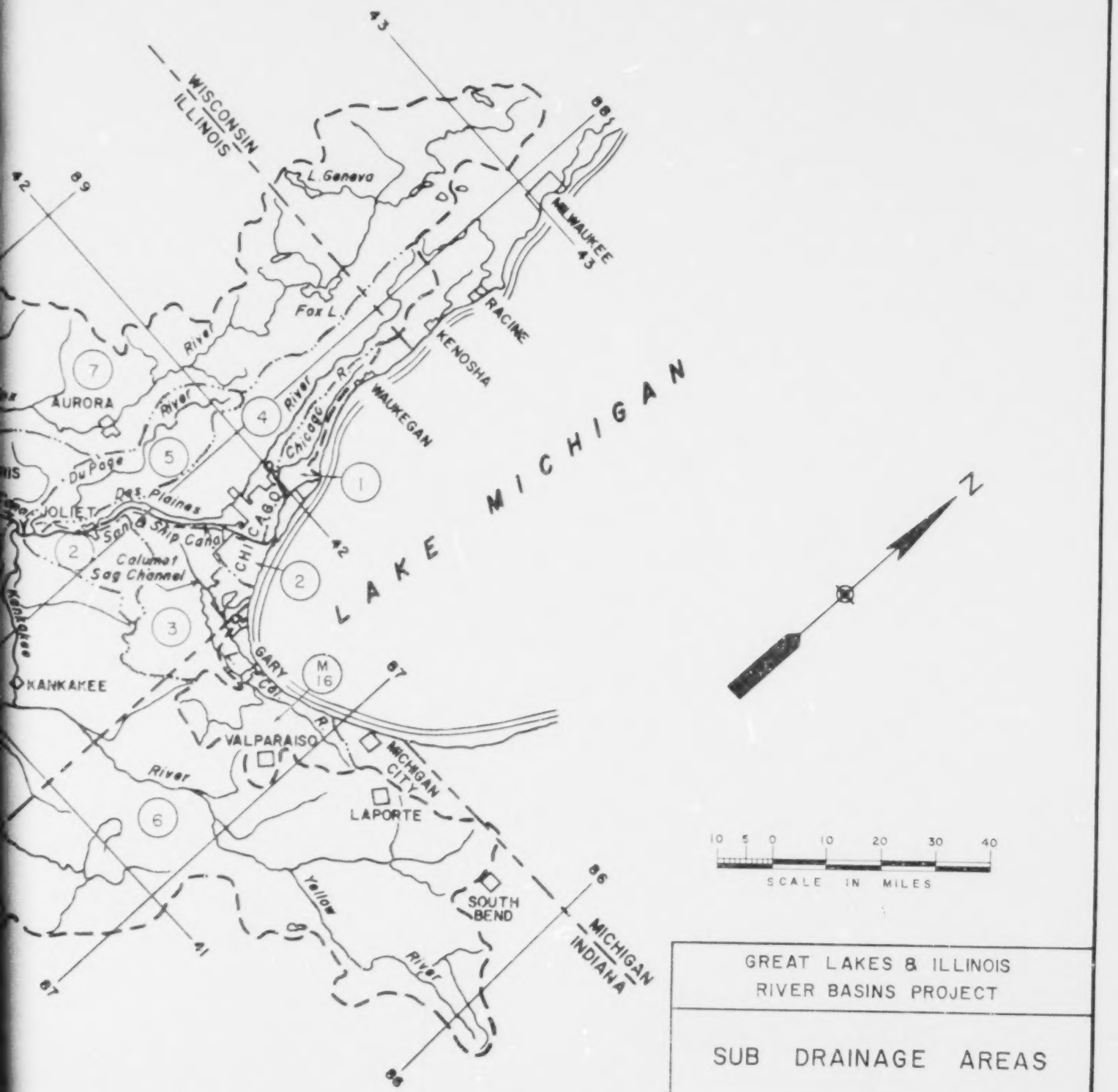
LEGEND

1. North Branch Chicago River
2. Illinois River System & Minor Tributaries (Lake Michigan to Confluence Kankakee River)
3. Cal-Sag Channel & Tributaries
4. Des Plaines River
5. DuPage River
6. Kankakee River
7. Fox River
8. Vermilion River
9. Mackinaw River
10. Spoon River
11. LaMoine River
12. Sangamon River
13. Macoupin Creek
14. Illinois River System & Minor Tributaries (Kankakee River to Spoon River)
15. Illinois River System & Minor Tributaries (Spoon River to Grafton, Illinois)
16. Lake Michigan

A

8 Minor Tributaries
Spoon River)

5 Minor Tributaries
ffton, Illinois)

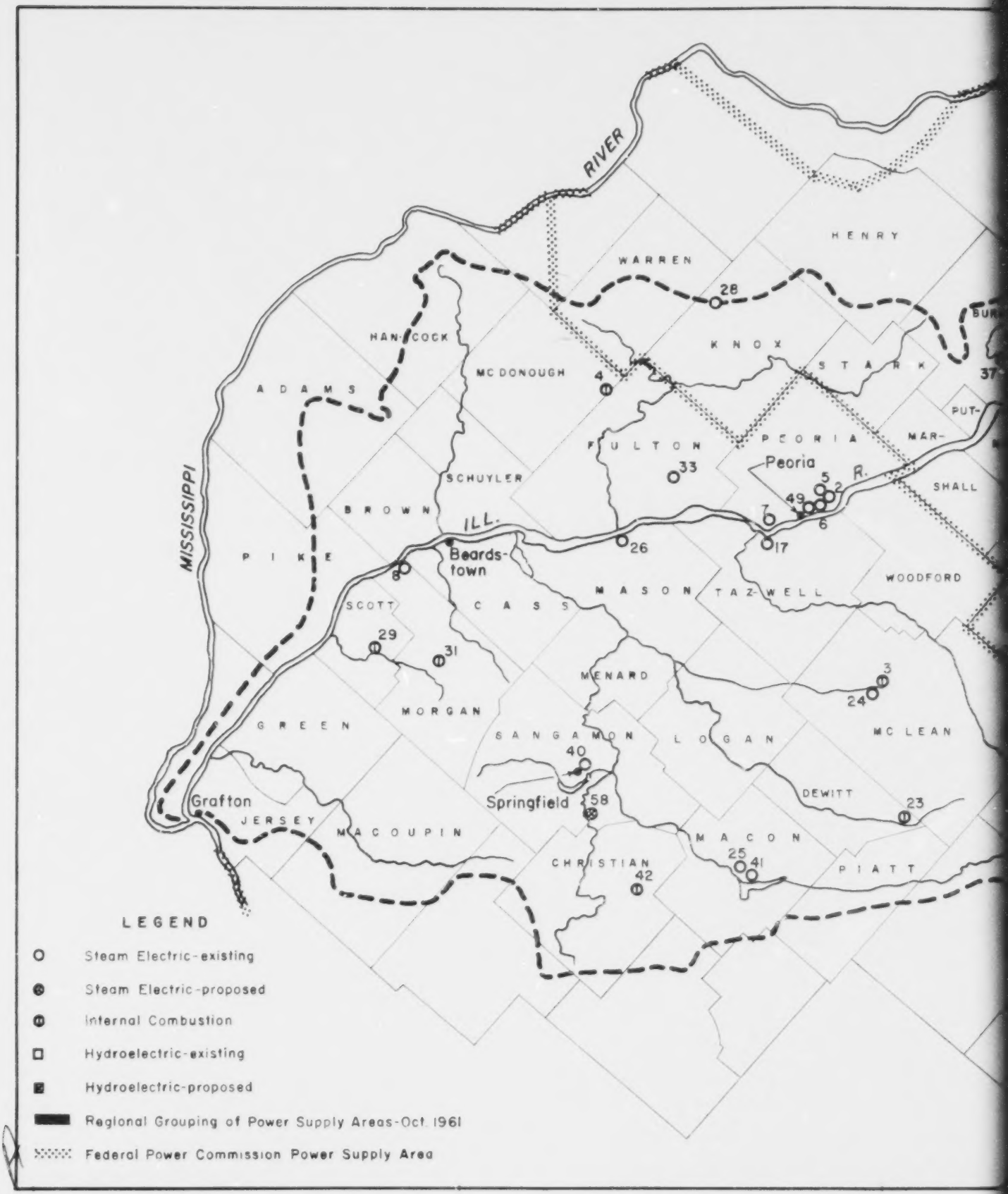


GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

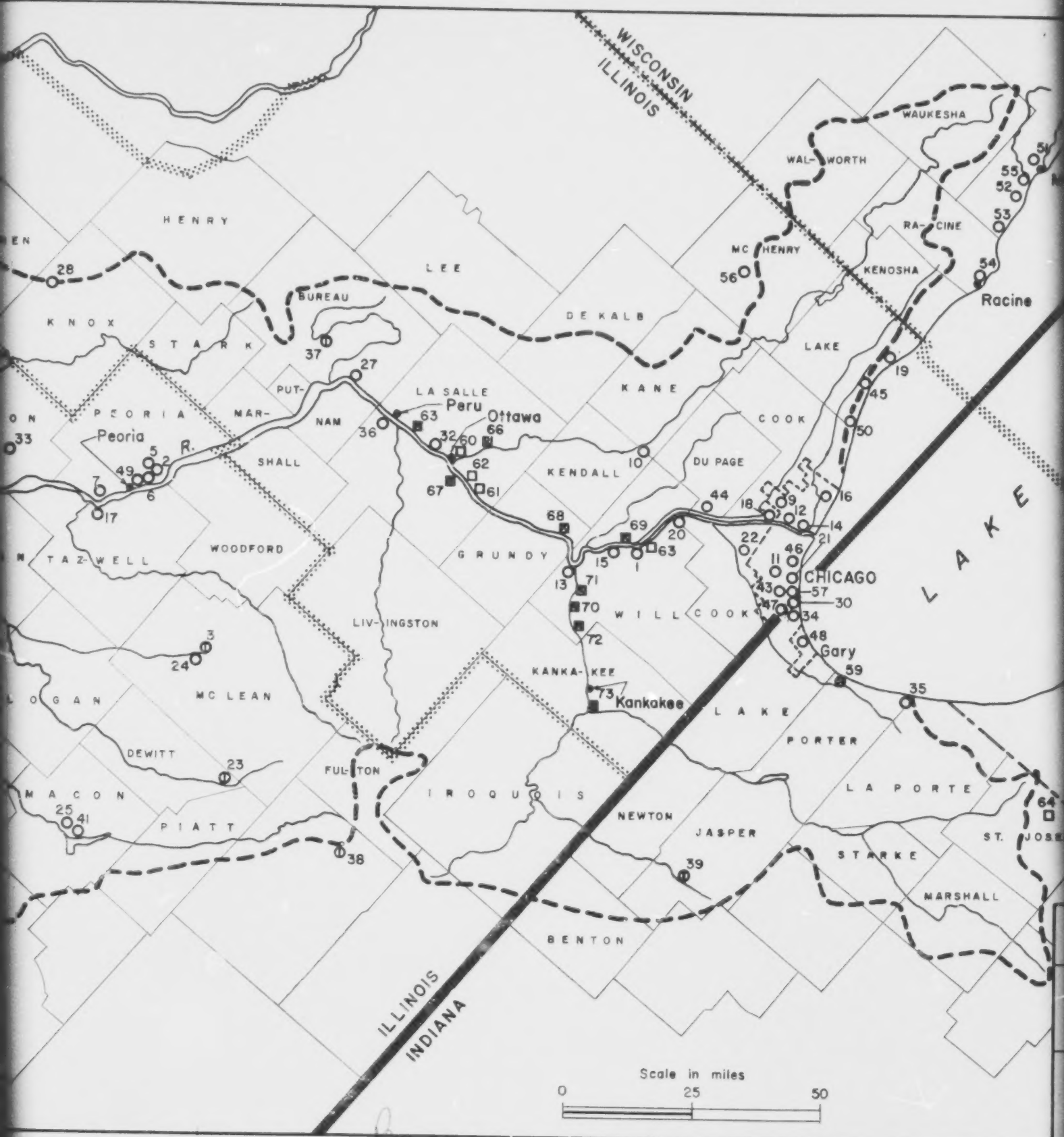
SUB DRAINAGE AREAS

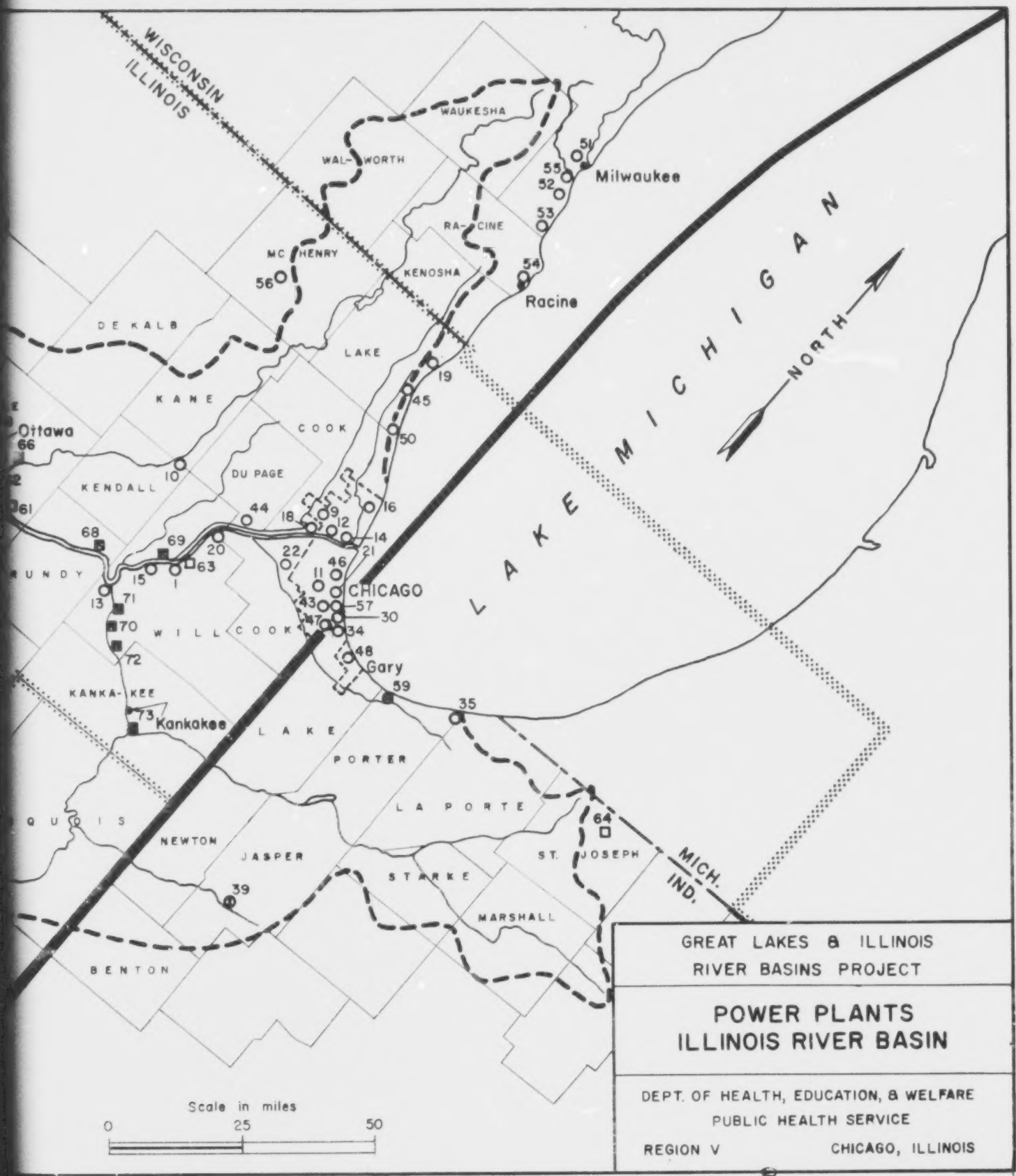
DEPT. OF HEALTH EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE II-2



MISSISSIPPI
RIVER
ILL.
R.
HENRY
WARREN
HAN-COCK
KNOX
STARK
MC DONOUGH
ADAMS
FULTON
PEORIA
MAR-
PUT-
SHALL
SCHUYLER
BROWN
PIKE
Peoria
Beards-town
MASON
TAZ-WELL
WOODFORD
SCOTT
CASS
MENARD
MORGAN
GREEN
SANGAMON
LOGAN
MC LEAN
DEWITT
Grafton
JERSEY
MACOUPIN
Springfield
MACON
CHRISTIAN
PIATT
28
4
33
5
2
49
6
7
17
26
8
29
31
3
24
40
58
23
25
41
42
37
LEGEND
Steam Electric-existing
Steam Electric-proposed
Internal Combustion
Hydroelectric-existing
Hydroelectric-proposed
Regional Grouping of Power Supply Areas-Oct. 1961
Federal Power Commission Power Supply Area


WISCONSIN
ILLINOIS
WAUKESHA
WAL-WORTH
RA-CINE
KENOSHA
MC HENRY
Racine
HENRY
LEE
DE KALB
KANE
LAKE
COOK
BUREAU
KNOX
STARK
PUT-NAM
MAR-SHALL
LA SALLE
Peru
Ottawa
PEORIA
Peoria
R.
KENDALL
DU PAGE
WOODFORD
TAZ-WELL
GRUNDY
LIV-INGSTON
WILL
COOK
CHICAGO
LAKE
MICHIGAN
Gary
KANKA-KEE
Kankakee
LOGAN
MC LEAN
DEWITT
FUL-TON
IROQUOIS
LAKE
PORTER
LA PORTE
MACON
PIATT
NEWTON
JASPER
STARKE
ST. JOSE
MARSHALL
BENTON
ILLINOIS
INDIANA
Scale in miles
0
25
50



GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

POWER PLANTS ILLINOIS RIVER BASIN

DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE II-3

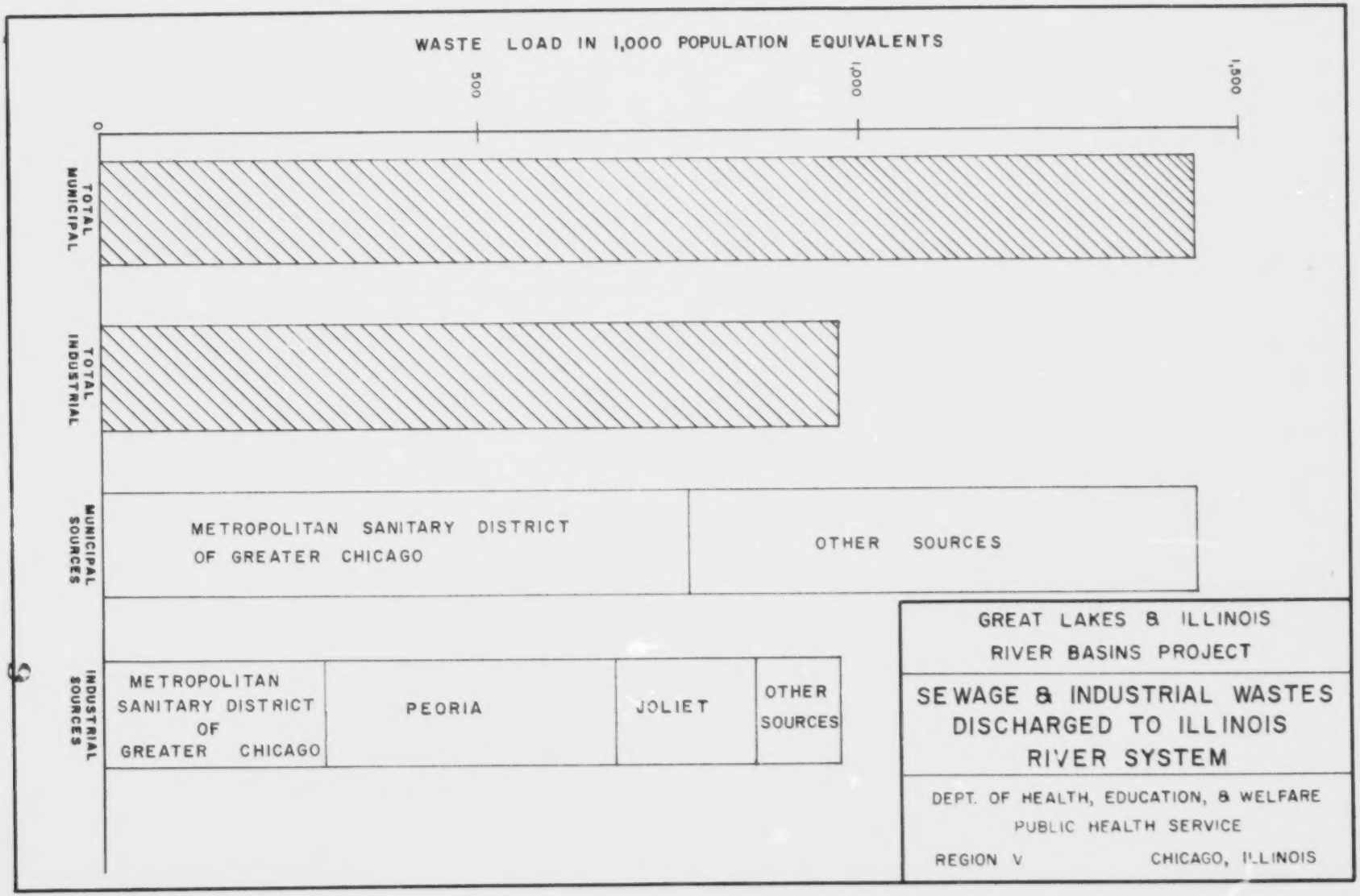
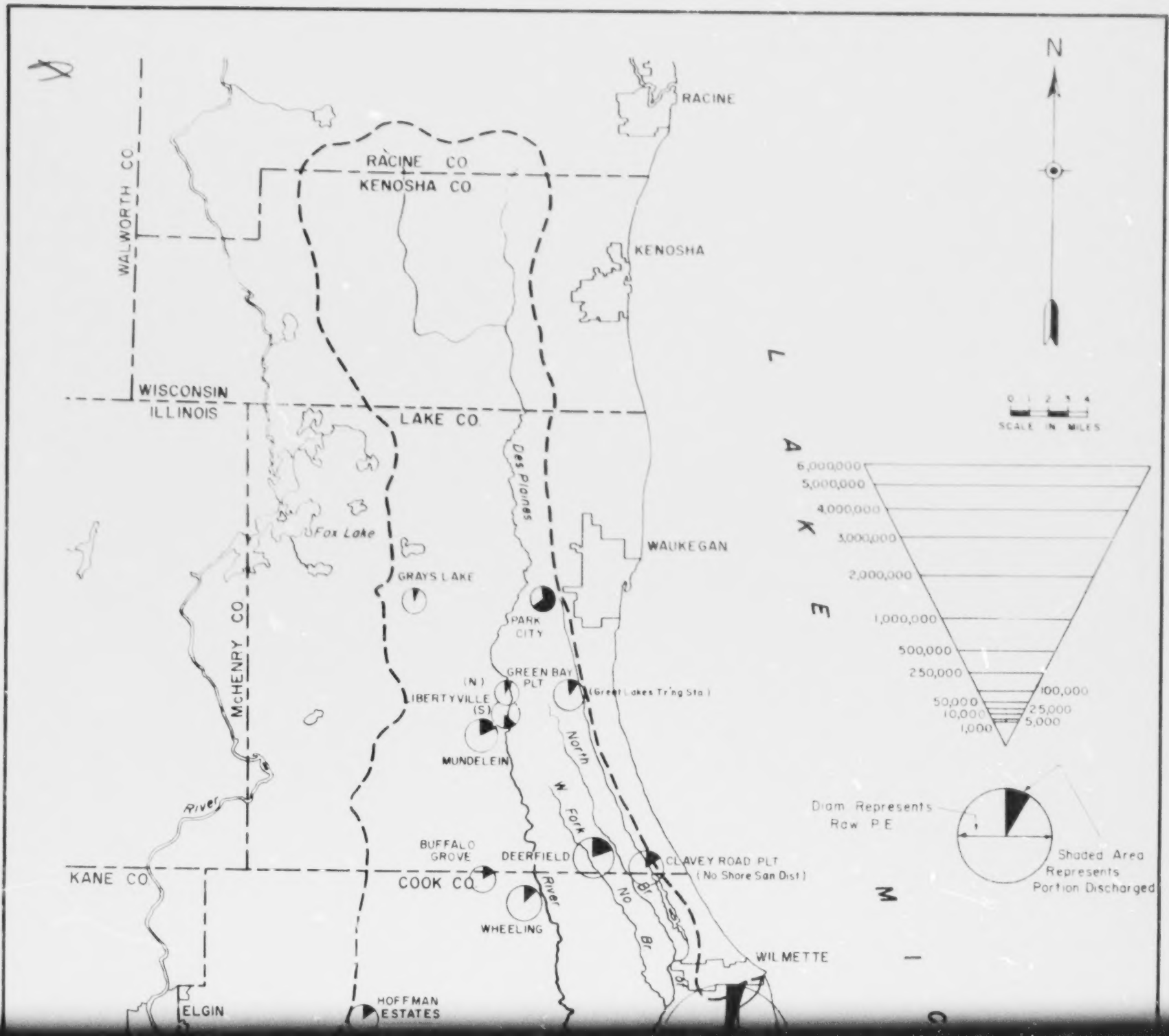
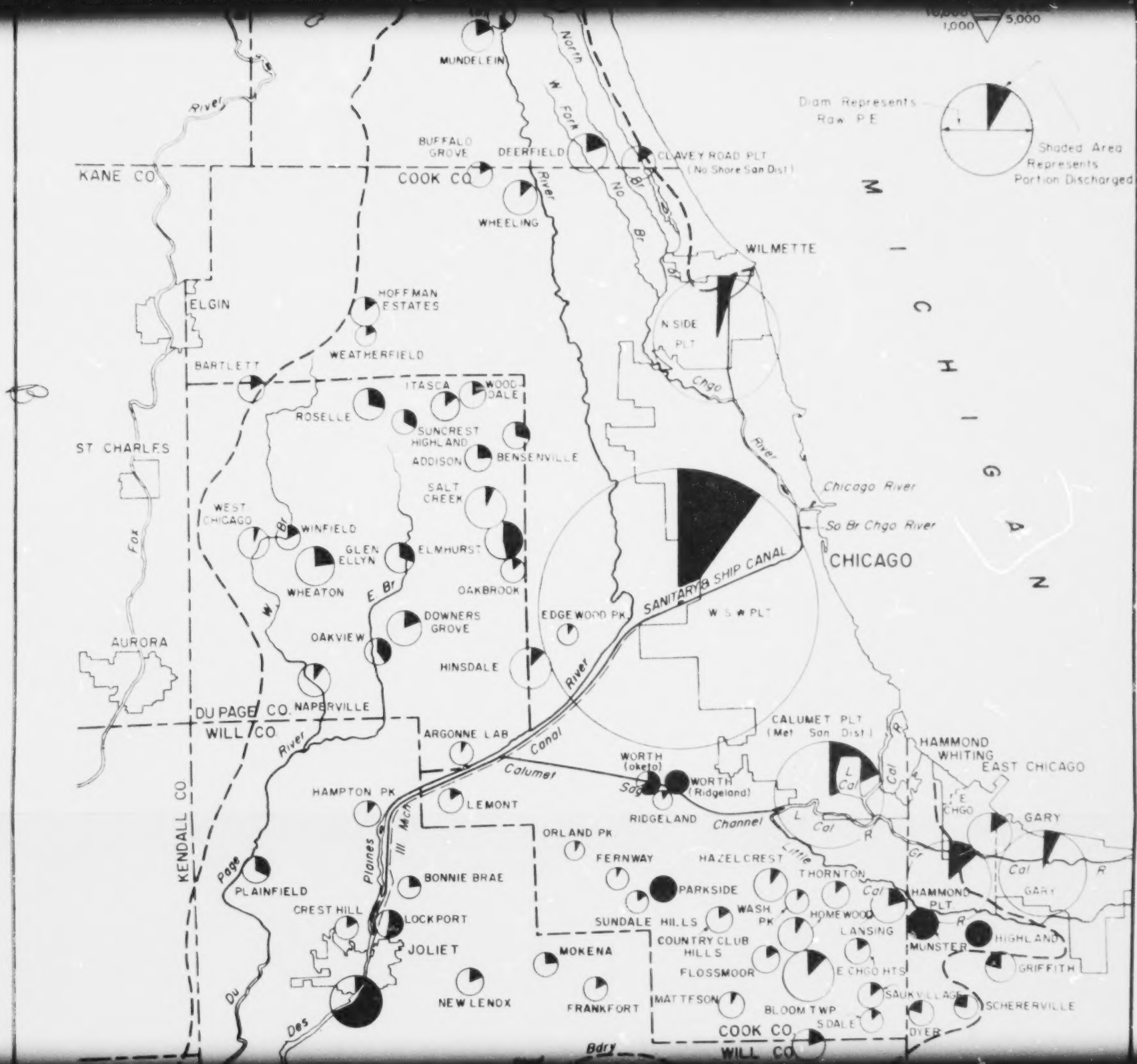
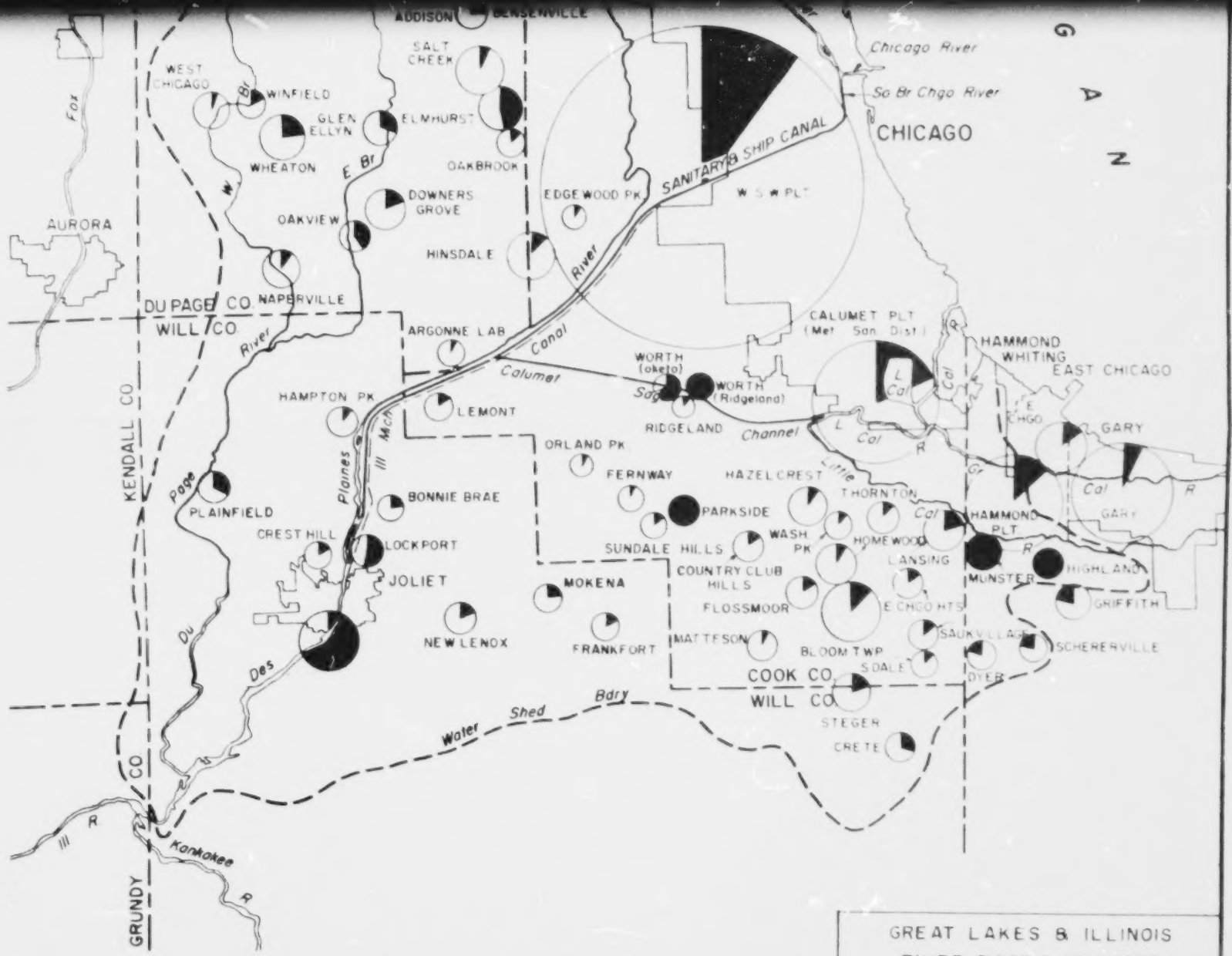

WASTE LOAD IN 1,000 POPULATION EQUIVALENTS
0
500
1,000
1,500
TOTAL MUNICIPAL
TOTAL INDUSTRIAL
MUNICIPAL SOURCES
METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO
OTHER SOURCES
INDUSTRIAL SOURCES
METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO
PEORIA
JOLIET
OTHER SOURCES
GREAT LAKES & ILLINOIS RIVER BASINS PROJECT
SEWAGE & INDUSTRIAL WASTES DISCHARGED TO ILLINOIS RIVER SYSTEM
DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V
CHICAGO, ILLINOIS

FIGURE III-1


RACINE
RACINE CO
KENOSHA CO
KENOSHA
WALWORTH CO
WISCONSIN
ILLINOIS
LAKE CO
Des Plaines
WAUKEGAN
Fox Lake
GRAYS LAKE
PARK CITY
McHENRY CO
GREEN BAY PLT
(Great Lakes Tr'ng Sta.)
(N.)
LIBERTYVILLE
(S.)
MUNDELEIN
North
W. Fork
No. Br.
River
BUFFALO GROVE
DEERFIELD
CLAVEY ROAD PLT
(No Shore San Dist.)
KANE CO
COOK CO
WHEELING
WILMETTE
ELGIN
HOFFMAN ESTATES
N
SCALE IN MILES
0 1 2 3 4
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
500,000
250,000
100,000
50,000
25,000
10,000
5,000
1,000
Diam. Represents Raw P.E.
Shaded Area Represents Portion Discharged



1,000
5,000
Diam Represents Raw P.E.
Shaded Area Represents Portion Discharged
MICHIGAN
KANE CO
COOK CO
DU PAGE CO.
WILL CO
KENDALL CO
MUNDELEIN
BUFFALO GROVE
DEERFIELD
CLAVEY ROAD PLT (No Shore San Dist)
WHEELING
WILMETTE
N SIDE PLT
ELGIN
HOFFMAN ESTATES
WEATHERFIELD
BARTLETT
ITASCA
WOOD DALE
ROSELLE
SUNCREST HIGHLAND
ADDISON
BENSENVILLE
ST CHARLES
SALT CREEK
WEST CHICAGO
WINFIELD
GLEN ELLYN
ELMHURST
WHEATON
OAKBROOK
DOWNERS GROVE
OAKVIEW
HINSDALE
EDGEWOOD PK
W S W PLT
AURORA
NAPERVILLE
ARGONNE LAB
CALUMET PLT (Met San Dist)
HAMMOND
WHITING
EAST CHICAGO
WORTH (oketo)
WORTH (Ridgeland)
RIDGELAND
HAMPTON PK
LEMONT
ORLAND PK
FERNWAY
HAZELCREST
THORNTON
GARY
PLAINFIELD
BONNIE BRAE
PARKSIDE
HAMMOND PLT
CREST HILL
LOCKPORT
SUNDALE HILLS
WASH PK
HOMEWOOD
LANSING
MUNSTER
HIGHLAND
JOLIET
MOKENA
COUNTRY CLUB HILLS
FLOSSMOOR
E CHGO HTS
GRIFFITH
NEW LENOX
FRANKFORT
MATTESON
BLOOM TWP
SAUKVILLAGE
SCHERERVILLE
S DALE
DYER
Chicago River
So Br Chgo River
CHICAGO
SANITARY & SHIP CANAL
Chgo River
North Br
W Fork
No Br
Fox River
Du Page River
Des Plaines
Calumet River
Canal
Sag Channel
Little Cal
Cal
Gr
Bdry

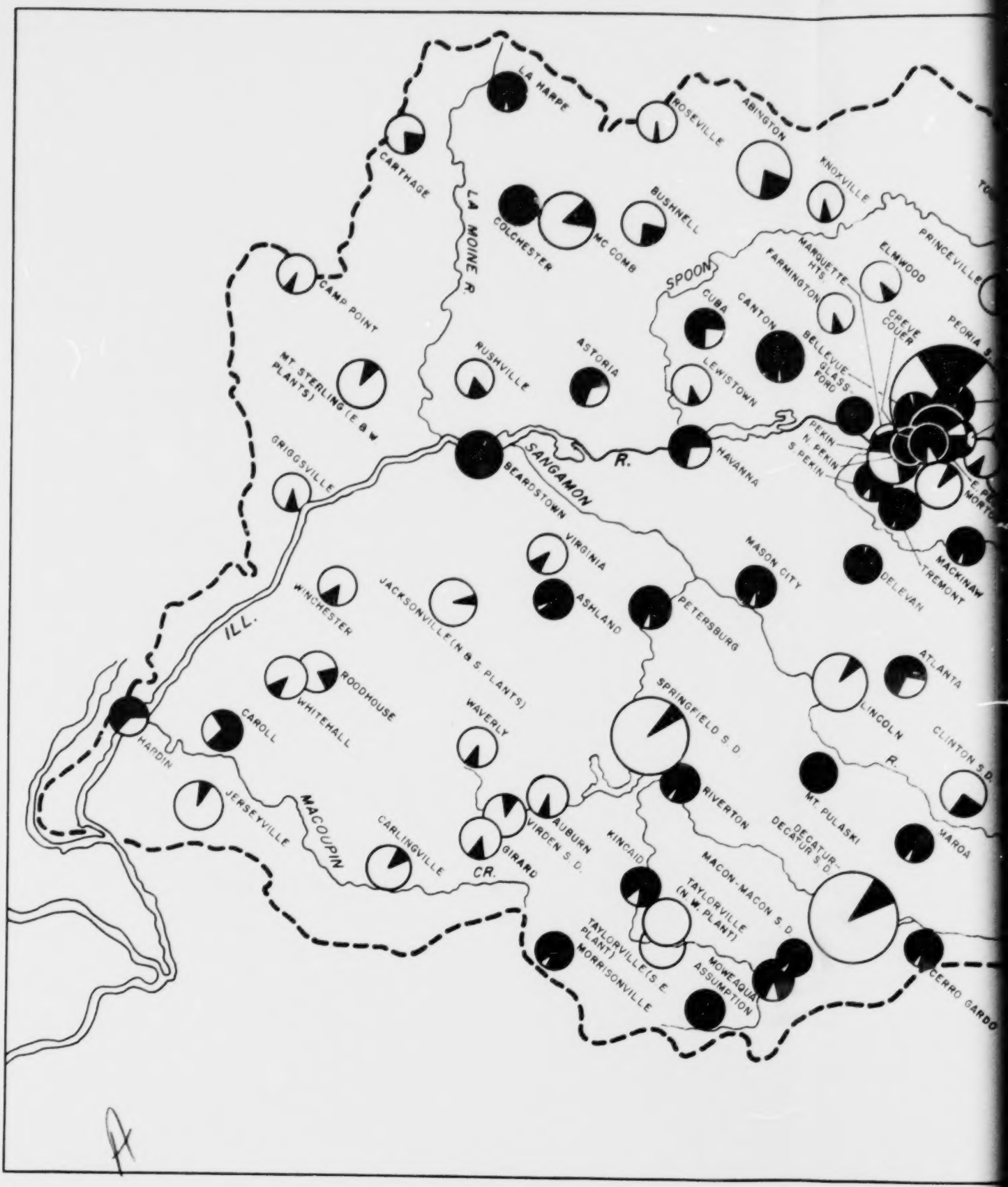


GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

SOURCES OF POLLUTION
MUNICIPAL WASTES
UPPER ILLINOIS RIVER SYSTEM

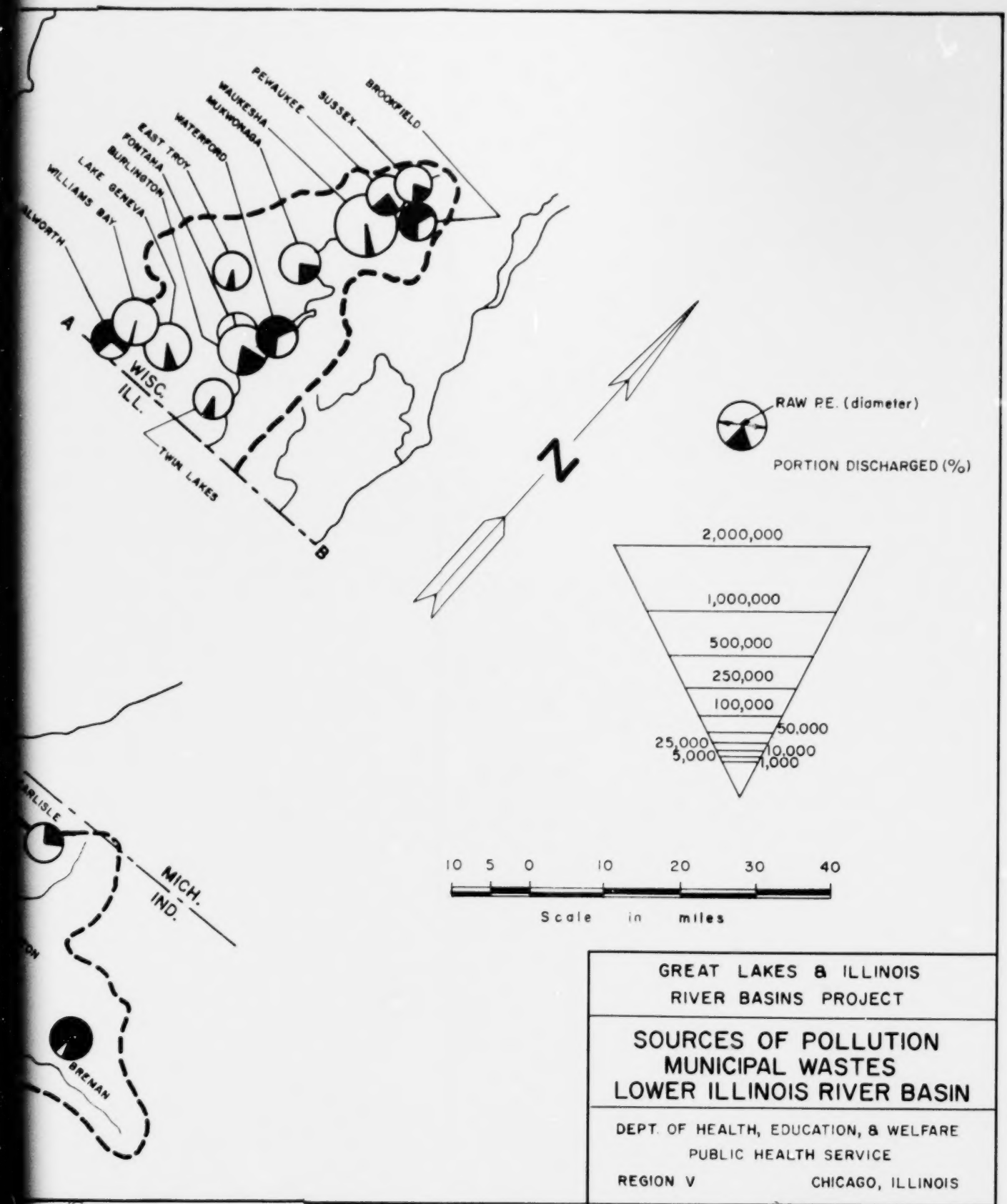
DEPT OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE III-2


LA HARPE
ROSEVILLE
ABINGTON
KNOXVILLE
CARTHAGE
LA MOINE R.
BUSHNELL
COLCHESTER
MC COMB
PRINCEVILLE
MARQUETTE HTS.
FARMINGTON
ELMWOOD
SPOON
CUBA
CANTON
CREVE COUER
CAMP POINT
BELLEVUE-GLASSFORD
PEORIA
MT. STERLING (E & W PLANTS)
NUSHVILLE
ASTORIA
LEWISTOWN
PEKIN
N. PEKIN
S. PEKIN
SANGAMON R.
HAVANNA
GRIGGSVILLE
BEARDSTOWN
VIRGINIA
MASON CITY
DELEVAN
MACKINAW
TREMONT
WINCHESTER
JACKSONVILLE (N & S PLANTS)
ASHLAND
PETERSBURG
ILL.
ATLANTA
ROODHOUSE
WHITEHALL
SPRINGFIELD S. D.
LINCOLN
CLINTON S.D.
CAROLL
WAVERLY
HARDIN
R.
RIVERTON
MT. PULASKI
DECATUR-DECATUR S.D.
JERSEYVILLE
MACOUPIN
AUBURN
VIRDEN S. D.
KINCAID
MACON-MACON S.D.
CARLINGVILLE
GIRARD
CR.
TAYLORVILLE (N. PLANT)
TAYLORVILLE (S.E. PLANT)
MOWEAQUA
ASSUMPTION
MORRISONVILLE
CERRO GARDO

ROSEVILLE
ABINGTON
KEWANEE
TOULON
R.
WYOMING
PRINCETON
MENDOTA
DEPUE
LADD
PERU
LA SALLE
UTICA
EARLVILLE
SANDWICH
AURORA S.D.
PLANO
BATAVIA
FOX RIVER GROVE
ALGONQUIN
MEADOWDALE SUBD.
W. DUNDEE
ELGIN ST. HOSPITAL
ELBURN
YORKVILLE (BRISTOL S.D.)
OSW
FOX
OTTAWA
MARSEILLES
MORRIS
SENECA
OGLESBY
GRANVILLE
SPRING VALLEY
HENRY
LACON
TOLUCA
MINONK
STREATOR
VERMILION
PONTIAC
DWIGHT
GARDNER
COAL CITY
WILMINGTON
MANTENO
PEOTONE
BOURBONAIS
BRADLEY
W. KANKAKEE
KANKAKEE
BEECHER
MANTENO ST. HOSPITAL
MOMENCE
KANKAKEE
CLIFTON
GILMAN
ONARGA
ST. ANNE
WATSEKA
MOROCCO
KENTLAND
GOODLAND
SHELDON
MILFORD
FOWLER
ILL.
IND.
CHILLICOTHE
N. CHILLICOTHE
PRINCEVILLE
ELMWOOD
MARQUETTE HTS.
FARMINGTON
SPOON
CUBA
CANTON
BELLEVUE
GLASS-FORD
LEWISTOWN
HAVANNA
CREVE COEUR
PEORIA S.D.
ROME
EL VISTA
SUNNYLAND
WASHINGTON
WASH-BURN
PEKIN
N. PEKIN
S. PEKIN
E. PEORIA
MORTON
ROANOKE
EUREKA
EL PASO
MACKINAW
METAMORA
ROLLING MEADOWS
BLOOMINGTON-NORMAL S.D.
CHENOA
LEXINGTON
FAIRBURY
CHATSWORTH
FOREST
GIBSON CITY
MASON CITY
DELEVAN
MACKINAW
TREMONT
PETERSBURG
ATLANTA
LINCOLN
CLINTON S.D.
FARMER CITY
HEYWORTH
LEROY
MAHOMET
FISHER
RIVERTON
SPRINGFIELD S.D.
MT. PULASKI
DECATUR
DECATUR S.D.
MACON-MACON S.D.
TAYLORVILLE (N.W. PLANT)
MOWEAQUA
ASSUMPTION
CERRO GARDO
MONTICELLO
HAROA
B

MC HENRY
WOODSTOCK
CRYSTAL LAKE
FOX RIVER GROVE
ALGONQUIN
MEADOWDALE SUBD
W. DUNDEE
ELGIN ST HOSPITAL
ELBURN
ANTIOCH
FOX LAKE
LAKE VILLA
ROUND LAKE S.D.
CARY
WAUCONDA
LAKE ZURICH
BARRINGTON
CARPENTERSVILLE
E. DUNDEE
ELGIN S.D.
AURORA S.D.
PLANO
BATAVIA
ST. CHARLES
GENEVA
YORKVILLE (BRISTOL S.D.)
OSWEGO
A
B
PEWAUKEE
SUSSEX
BROOKFIELD
WAUKESHA
MUKWONAGA
WATERFORD
EAST TROY
FONTANA
BURLINGTON
LAKE GENEVA
WILLIAMS BAY
WALWORTH
WISC.
ILL.
TWIN LAKES
LAKE MICHIGAN
MORRIS
WILMINGTON
PEOTONE
MANTENO
BEECHER
MANTENO ST. HOSPITAL
ST. JOHN
CEDAR LAKE
MOMENCE
KANKAKEE
ST. ANNE
LOWELL
HEBRON
NORMAN BEATTY HOSP
KINGSFORD HTS.
LA PORTE
NEW CARLISLE
MICH.
IND.
MOROCCO
WALKERTON
KNOX
N. JUDSON
PLYMOUTH
BREMAN
ARGOS
ST. JOSEPH COLLEGE
KENTLAND
GOODLAND
SHELDON
FOWLER

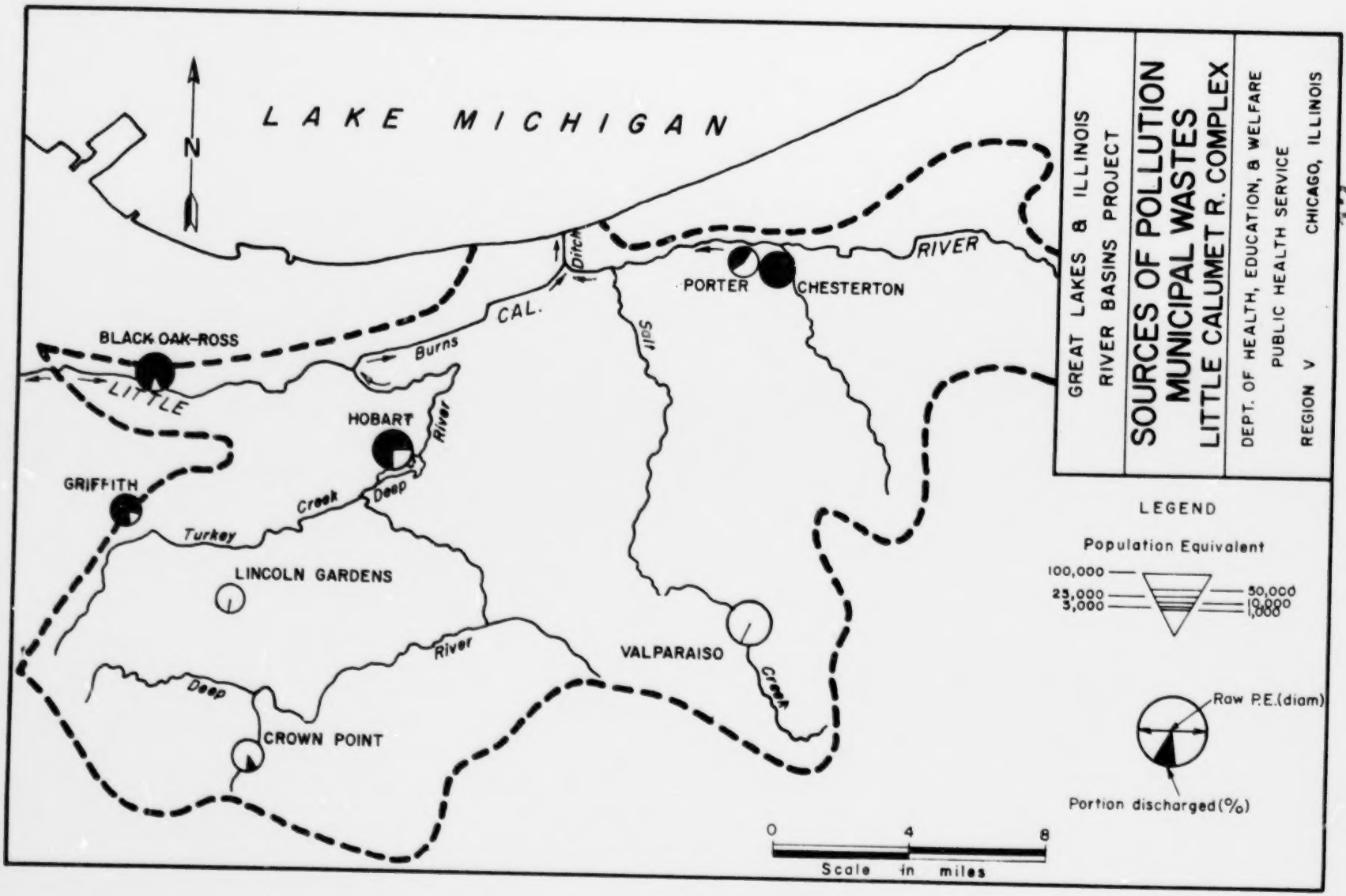


GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

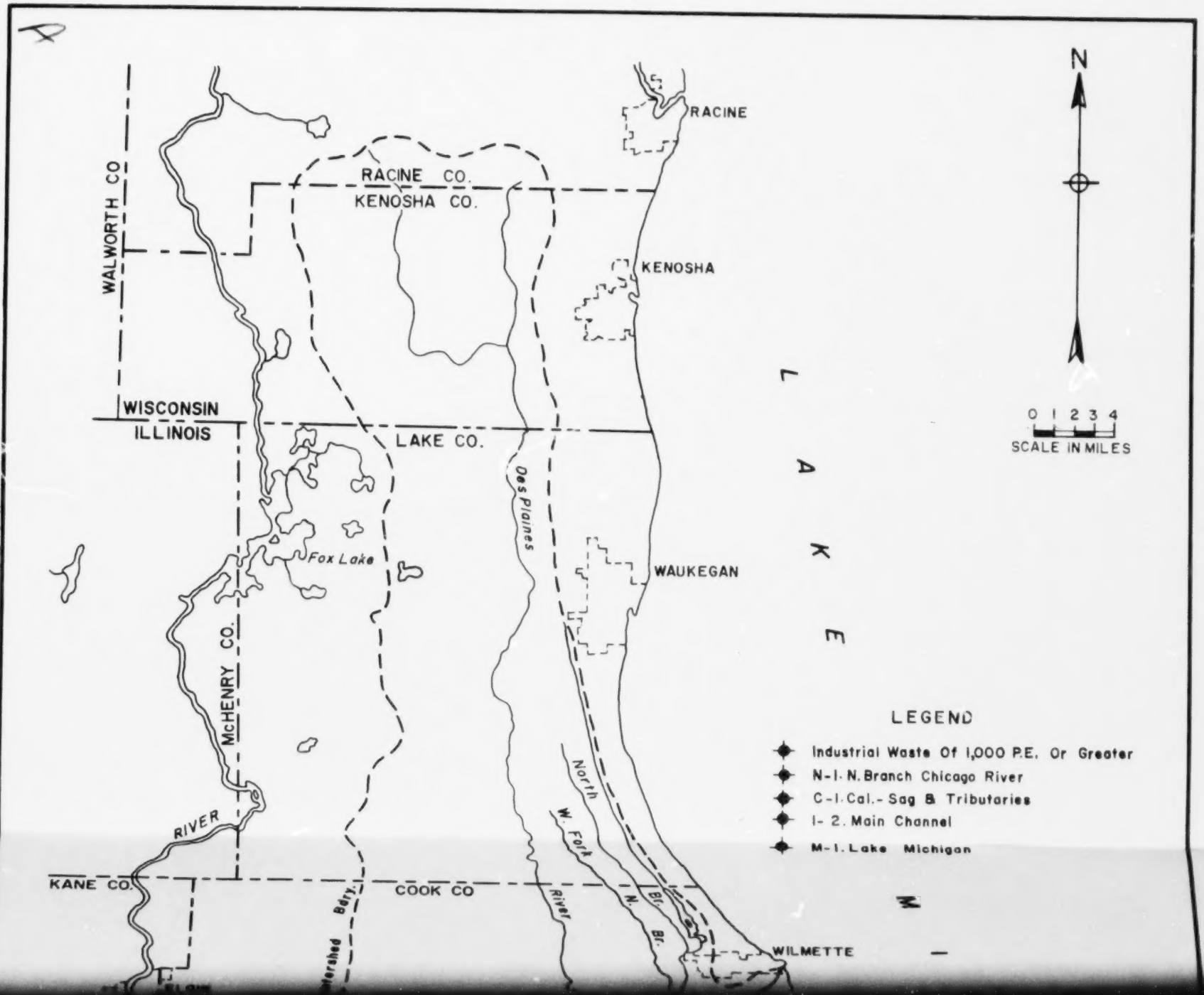
SOURCES OF POLLUTION
MUNICIPAL WASTES
LOWER ILLINOIS RIVER BASIN

DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

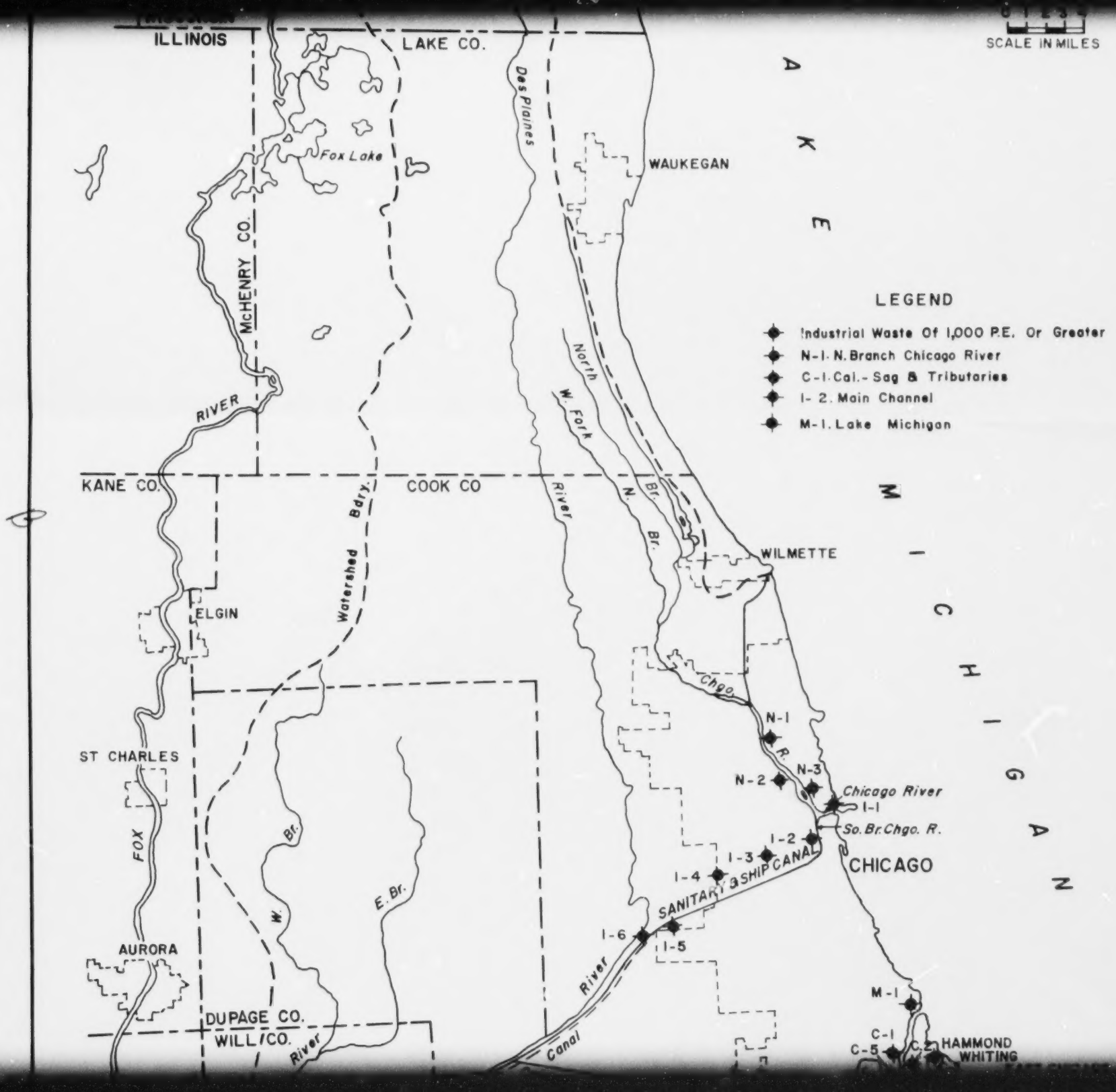
FIGURE III-3

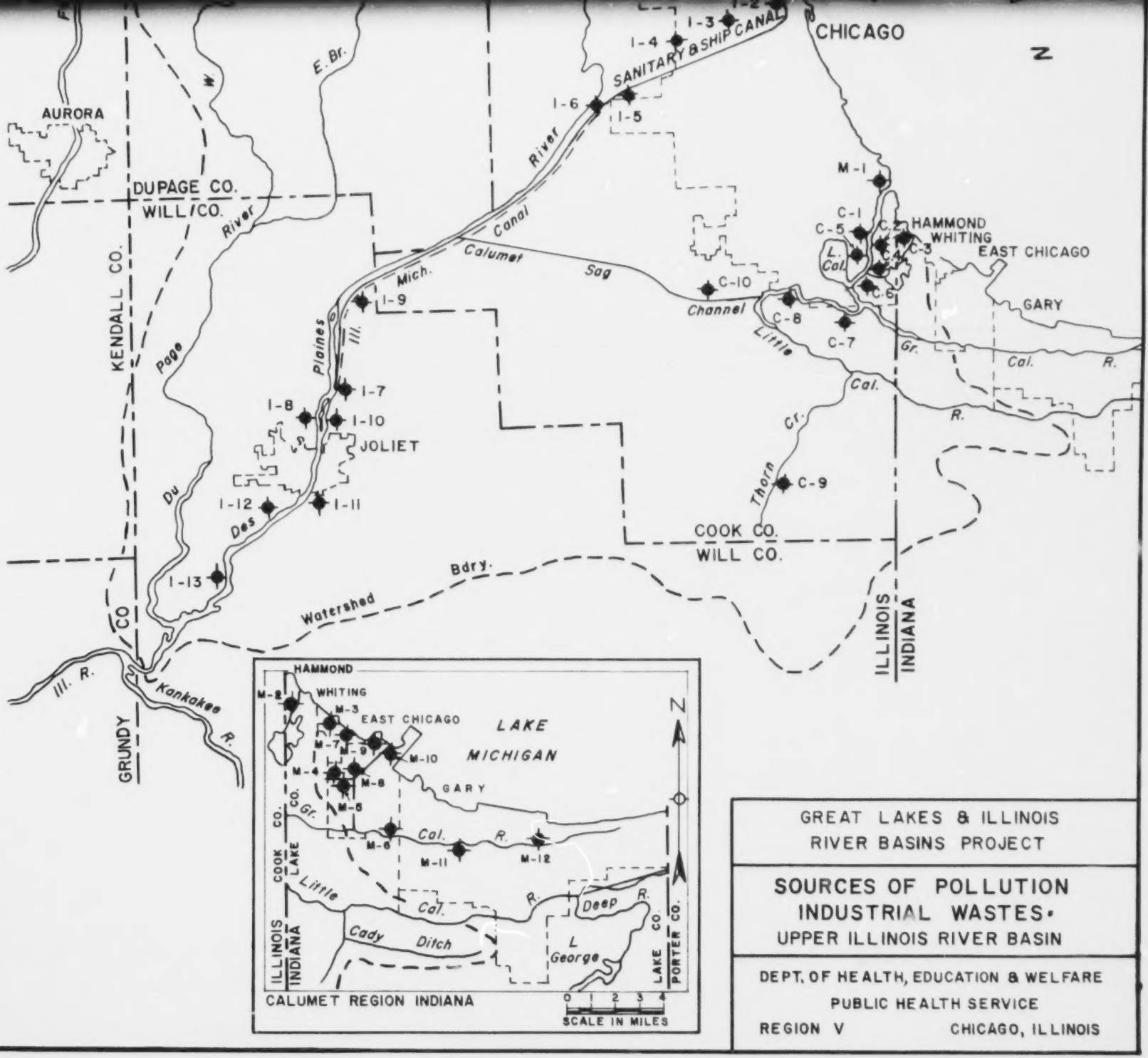


12 FIGURE III-4



N
RACINE
RACINE CO.
KENOSHA CO.
KENOSHA
WALWORTH CO
WISCONSIN
ILLINOIS
LAKE CO.
Des Plaines
Fox Lake
WAUKEGAN
McHENRY CO.
RIVER
KANE CO.
COOK CO
Bdry.
River
North
W. Fork
N. Br.
Br.
WILMETTE
L A K E
M I
0 1 2 3 4
SCALE IN MILES
LEGEND
Industrial Waste Of 1,000 P.E. Or Greater
N-1. N. Branch Chicago River
C-1. Cal.- Sag & Tributaries
1- 2. Main Channel
M-1. Lake Michigan


ILLINOIS
LAKE CO.
Des Plaines
Fox Lake
WAUKEGAN
McHENRY CO.
RIVER
North Br.
W. Fork
River
N. Br.
KANE CO.
COOK CO
Watershed Bdry.
WILMETTE
ELGIN
Chgo.
N-1
R.
N-2
N-3
Chicago River
I-1
So. Br. Chgo. R.
I-2
I-3
I-4
SANITARY & SHIP CANAL
CHICAGO
ST CHARLES
FOX
Br.
E. Br.
W.
I-6
I-5
AURORA
River
M-1
C-1
C-5
C-2
HAMMOND
WHITING
DUPAGE CO.
WILL CO.
River
Canal
SCALE IN MILES
LEGEND
Industrial Waste Of 1,000 P.E. Or Greater
N-1. N. Branch Chicago River
C-1. Cal.-Sag & Tributaries
I-2. Main Channel
M-1. Lake Michigan

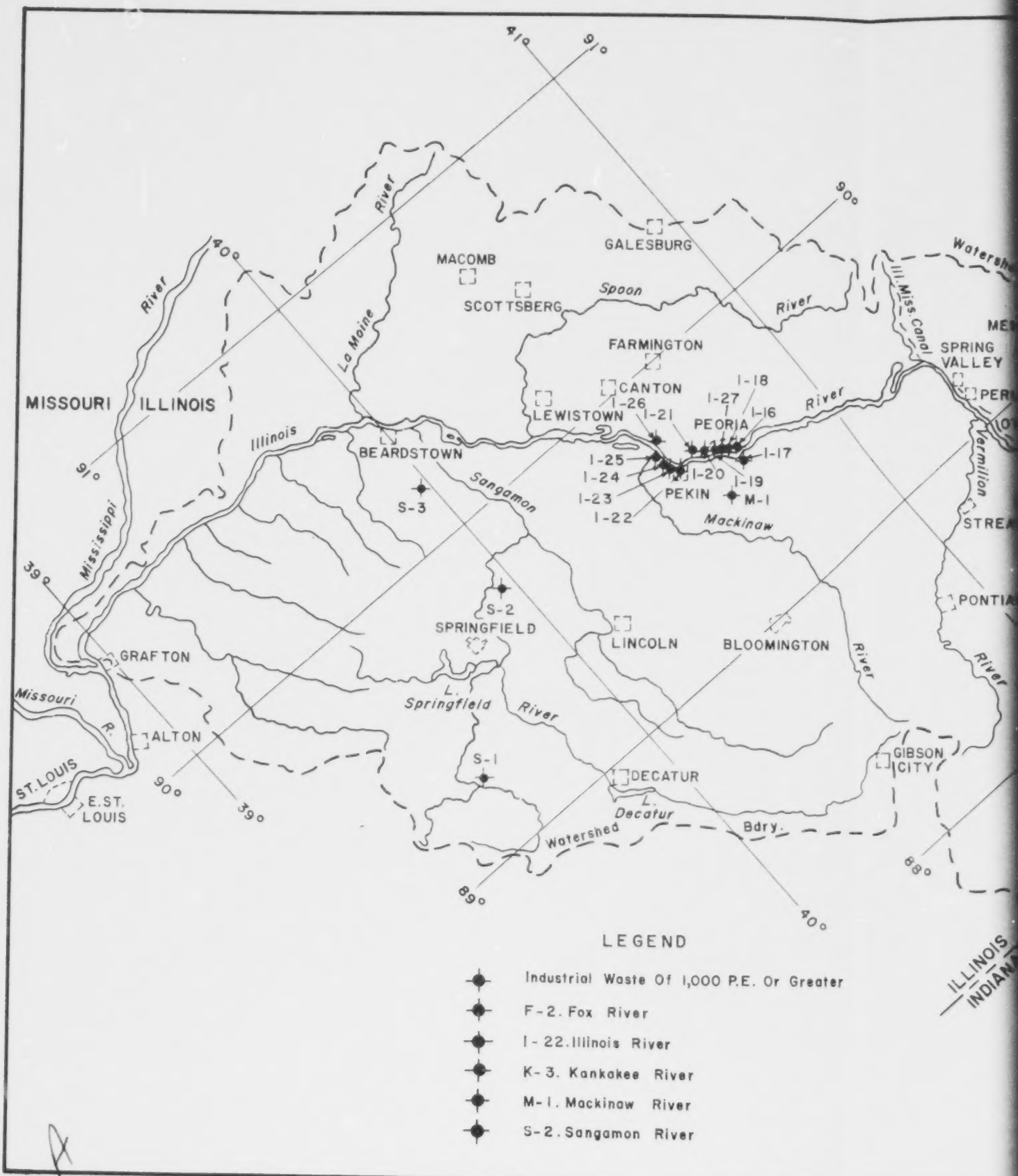


GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

SOURCES OF POLLUTION INDUSTRIAL WASTES· UPPER ILLINOIS RIVER BASIN

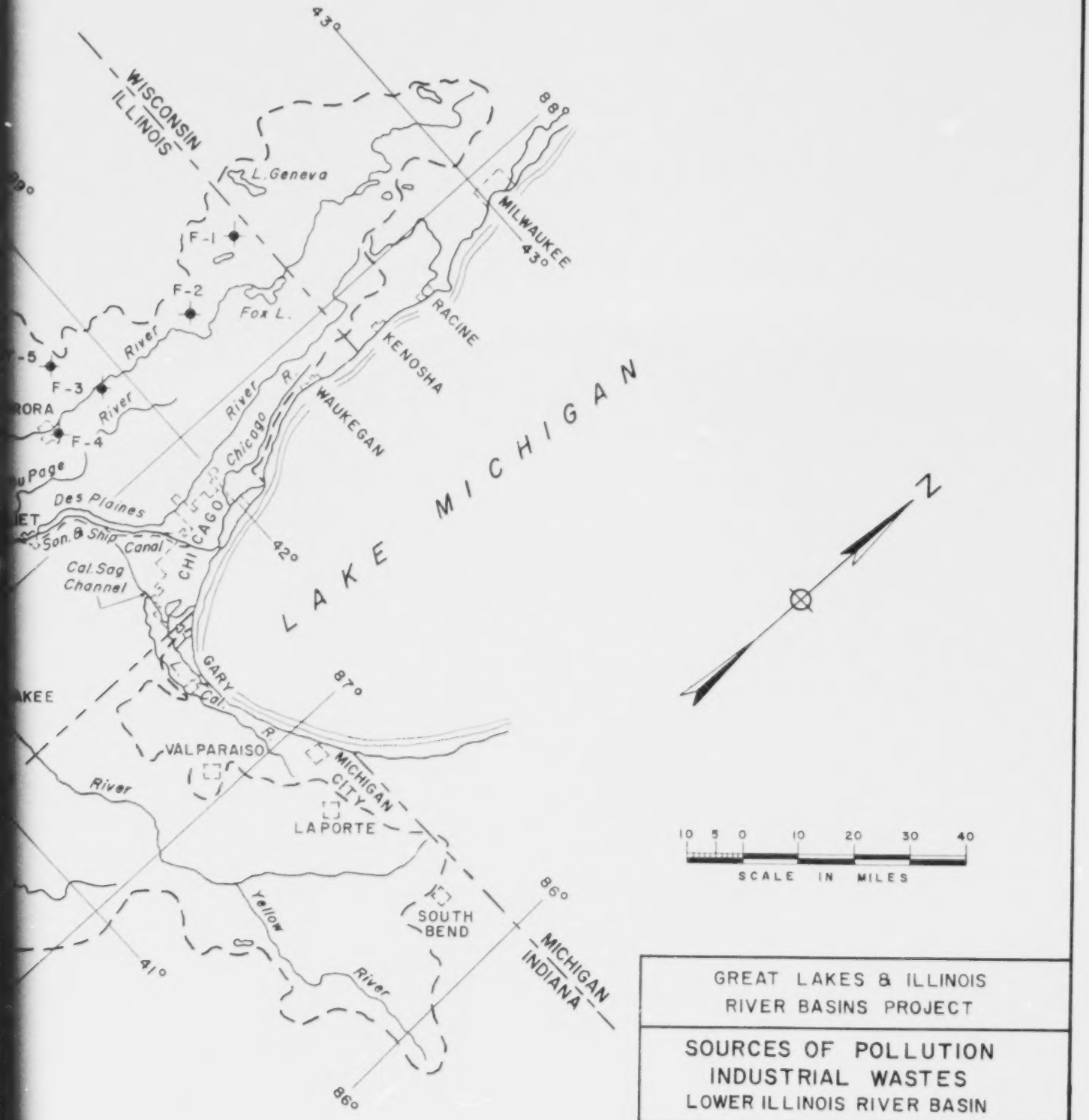
DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE III-5



MISSOURI
ILLINOIS
MACOMB
SCOTTSBERG
GALESBURG
FARMINGTON
CANTON
LEWISTOWN
PEORIA
PEKIN
BEARDSTOWN
SPRINGFIELD
LINCOLN
BLOOMINGTON
GRAFTON
ALTON
ST. LOUIS
E. ST. LOUIS
DECATUR
GIBSON CITY
SPRING VALLEY
PONTIA
Spoon
River
La Moine
Illinois
Mississippi
Missouri
R.
Sangamon
Mackinaw
Vermilion
Ill. Miss. Canal
Watershed
Bdry.
L. Springfield
L. Decatur
I-16
I-17
I-18
I-19
I-20
I-21
I-22
I-23
I-24
I-25
I-26
I-27
M-1
S-1
S-2
S-3
41°
40°
39°
91°
90°
89°
88°
LEGEND
Industrial Waste Of 1,000 P.E. Or Greater
F-2. Fox River
I-22. Illinois River
K-3. Kankakee River
M-1. Mackinaw River
S-2. Sangamon River
ILLINOIS
INDIANA

WISCONSIN
ILLINOIS
L. Geneva
MILWAUKEE
RACINE
KENOSHA
WAUKEGAN
LAKE MICHIGAN
Watershed
Bdry.
Ill. Miss. Canal
MENDOTA
SPRING VALLEY
PERU
OTTAWA
Fox
AURORA
Fox L.
F-1
F-2
F-3
F-4
F-5
River
Vermilion
Ill. Mich
I-15
I-14
MORRIS
STREATOR
Canal
JOLIET
Du Page
Des Plaines
San. & Ship Canal
CHICAGO
Chicago R.
Cal. Sag Channel
K-3
Kankakee
KANKAKEE
PONTIAC
GARY
Cal. R.
VALPARAISO
MICHIGAN CITY
LAPORTE
GIBSON CITY
WATSEKA
K-2
K-1
Yellow River
SOUTH BEND
ILLINOIS
INDIANA
MICHIGAN
INDIANA
Greater
90°
89°
88°
87°
86°
42°
43°
41°
40°
10 5

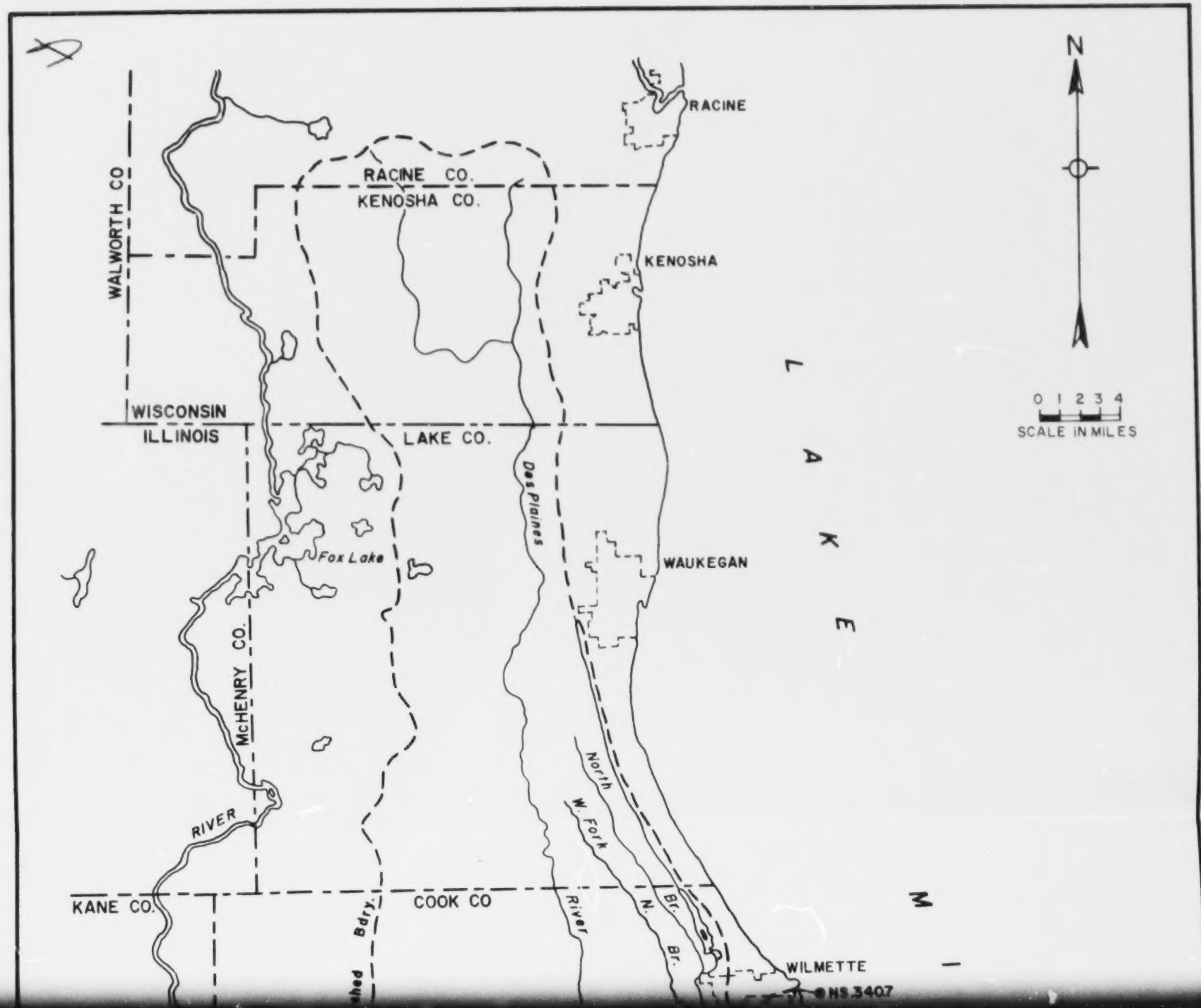


GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

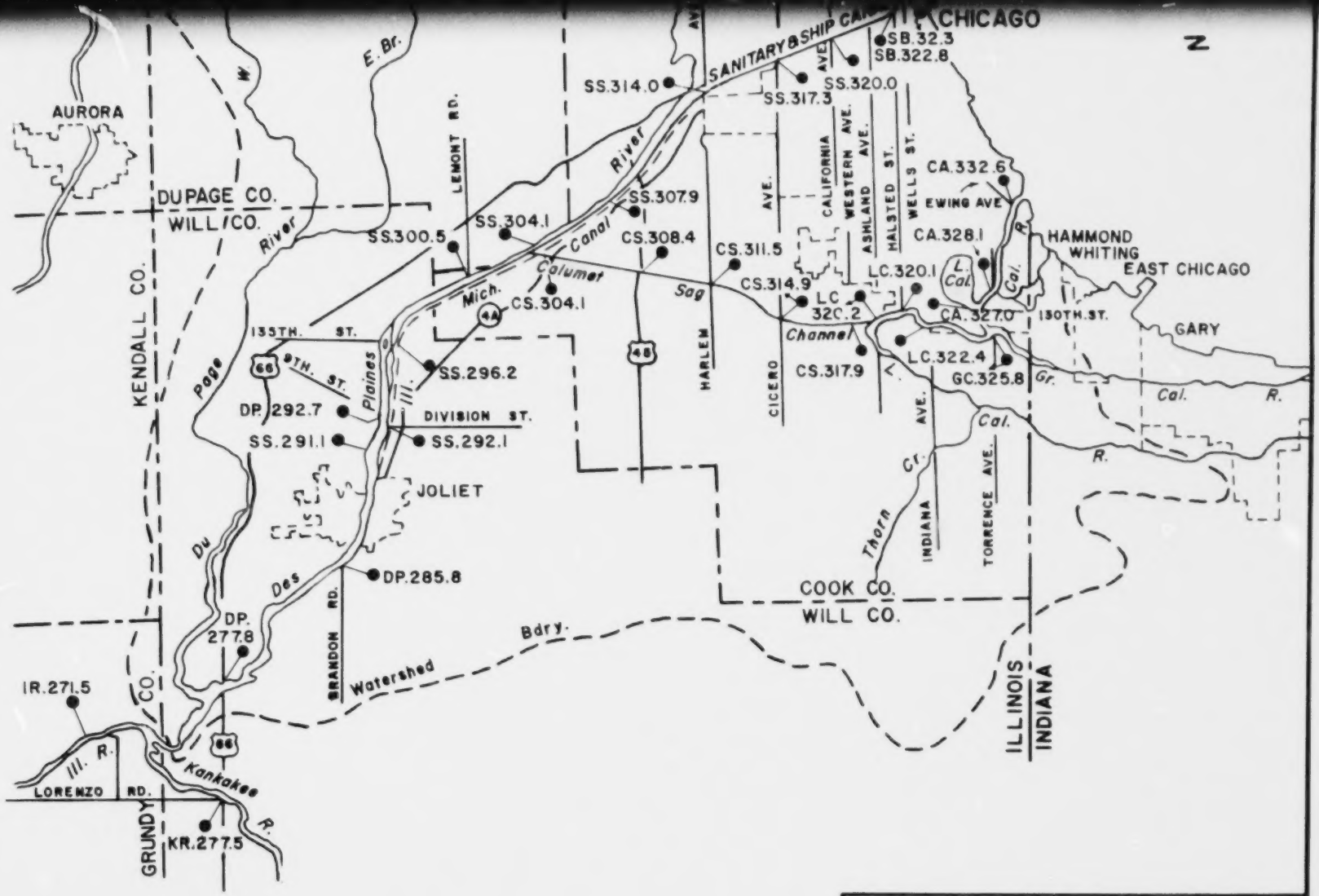
SOURCES OF POLLUTION
INDUSTRIAL WASTES
LOWER ILLINOIS RIVER BASIN

DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE III-6


RACINE
RACINE CO.
KENOSHA CO.
KENOSHA
WALWORTH CO
WISCONSIN
ILLINOIS
LAKE CO.
Des Plaines
Fox Lake
WAUKEGAN
McHENRY CO.
RIVER
North
W. Fork
N. Br.
River
KANE CO.
COOK CO
Bdry.
WILMETTE
NS 340.7
LAKE
MICHIGAN
N
0 1 2 3 4
SCALE IN MILES

MICHIGAN
CHICAGO
EAST CHICAGO
HAMMOND
WHITING
GARY
WILMETTE
NS.340.7
NS.338.6
NS.334.9
NS.336.9
NS.333.4
NB.333.4
NB.331.4
NB.329.0
NB.325.8
CH.325.8
CH.326.9
SB.32.3
SB.322.8
SS.320.0
SS.317.3
SS.314.0
SS.307.9
CS.308.4
CS.311.5
CS.314.9
CS.317.9
LC.320.1
LC.322.4
GC.325.8
CA.332.6
CA.328.1
CA.327.0
SS.304.1
CS.304.1
SS.300.5
SS.296.2
SS.292.1
DP.285.8
DP.292.7
SS.291.1
DP.277.8
EMERSON ST.
OAKTON ST.
DEVON AVE.
FOSTER AVE.
ADDISON ST.
KINZIE ST.
12TH. ST.
CHICAGO R.
SO. BR. CHGO R.
SANITARY & SHIP CANAL
WELLS ST.
HALSTED ST.
ASHLAND AVE.
WESTERN AVE.
CALIFORNIA AVE.
CICERO AVE.
HARLEM AVE.
EWING AVE
130TH. ST.
TORRENCE AVE.
INDIANA AVE.
Thorn Cr.
Cal. R.
Gr. R.
Channel
Sag
Calumet
Canal
River
Mich.
Ill.
Plaines
Page
Des
Du
LEMONT RD.
DIVISION ST.
JOLIET
133TH. ST.
9TH. ST.
BRANDON RD.
Watershed Bdry.
Bdry.
COOK CO.
WILL CO.
DUPAGE CO.
KENDALL CO.
KANE CO.
ELGIN
ST CHARLES
AURORA
FOX
RIVER
W. Fork
N. Br.
Br.
E. Br.
W. Br.



GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

SAMPLING STATIONS
UPPER ILLINOIS RIVER BASIN

DEPT, OF HEALTH EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE IX-1

CHICAGO
Calumet Harbor
Stony
Calumet Sag Channel
Cr.
WESTERN AVE.
HALSTED ST.
L. Calumet
CAL. R.
Wolf L.
WHITING
LC-320.1
CS-317.9
130TH ST.
LC-322.4
CA-327.0
GC-325.8
LC-320.2
L. CAL. R.
INDIANA
GC-326.6
LC-323.4
GC-328.7
GC-331.1
Indiana
GRAND
ASHLAND AVE.
INDIANA AVE.
147 TH. ST.
LC 325.0
BURNHAM AVE.
LITTLE
LC 328.0
159TH. ST.
LC 330.0
HOHMAN AVE.
COLUMBIA AVE.
INDIANAPOLIS BLVD.
HAM
167 TH. ST.
TC 330.3
LC 333.1
LC 334.9
CALUMET
Cr.
North
TORRENCE AVE.
RIDGE ROAD
COOK CO.
INDIANA LAKE CO.
ILLINOIS
Cr.
Butterfield
Thorn
Hart Ditch
LEGEND
LC-320.2 River Miles Above Grafton
Sampling Stations
0 1 2 3
SCALE IN MILES

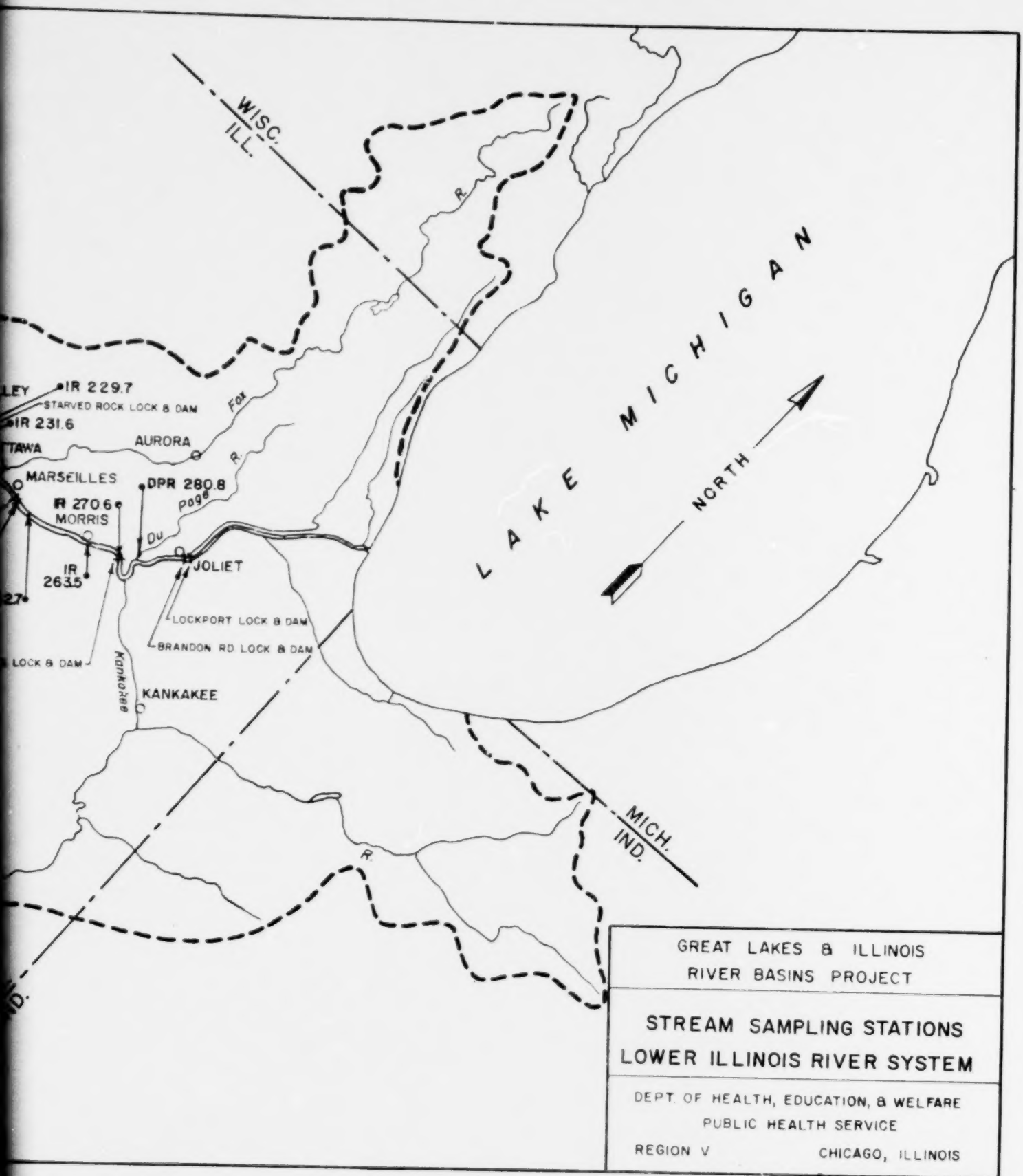
GREAT LAKES & ILLINOIS RIVER BASINS PROJECT
STREAM SAMPLING STATIONS CALUMET AREA
DEPT. OF HEALTH, EDUCATION & WELFARE PUBLIC HEALTH SERVICE REGION V CHICAGO, ILLINOIS

FIGURE IX-2B

IR 198.1
IR 184.8
Kickapoo Cr.
KC161.7
Spoon
LR 95.8
SR 133.7
IR 151.8
CHILLICOTHE
IR 81.0
IR 88.0
IR 125.8
IR 166.1
LACON
IR 239.2
IR 78.6
IR 100.9
IR 133.5
IR 173.4
IR 168.9
IR 105.5
PEORIA
IR 240.2
MEREDOSIA
BEARDS-TOWN
BATH
HAVANNA
PEKIN
IR 165.3
MARSEILLES LOCK & DAM
PEORIA LOCK & DAM
IR 71.2
IR 117.6
FLORENCE
Sangamon
IR 143.2
Mackinaw
NEW LA GRANGE LOCK & DAM
IR 55.9
MR 161.0
MC 23.7
ILLINOIS
IR 21.7
SPRINGFIELD
HARDIN
GRAFTON
Macoupin
Cr.
DECATUR
R.
SCALE IN MILES
0
25
50

WISC.
ILL.
R.
IR 198.1
IR 219.8
IR 229.7
SPRING VALLEY
STARVED ROCK LOCK & DAM
PERU
IR 231.6
Fox
R.
KC 161.7
IR 184.8
CHILLICOTHE
IR 166.1
IR 209.4
IR 239.2
OTTAWA
AURORA
LACON
FR 241.1
MARSEILLES
DPR 280.8
IR 173.4
IR 181.3
IR 168.9
IR 270.6
MORRIS
PEORIA
IR 240.2
IR 165.3
PEKIN
MARSEILLES LOCK & DAM
PEORIA LOCK & DAM
Vermilion R.
IR 246.9
IR 263.5
IR 252.7
JOLIET
Mackinaw
PONTIAC
LOCKPORT LOCK & DAM
BRANDON RD LOCK & DAM
DRESDEN IS. LOCK & DAM
Kankakee
KANKAKEE
LAKE MIC
MICH.
IND.
ILL.
IND.
DECATUR
SCALE IN MILES
25
50

B



GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

STREAM SAMPLING STATIONS
LOWER ILLINOIS RIVER SYSTEM

DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

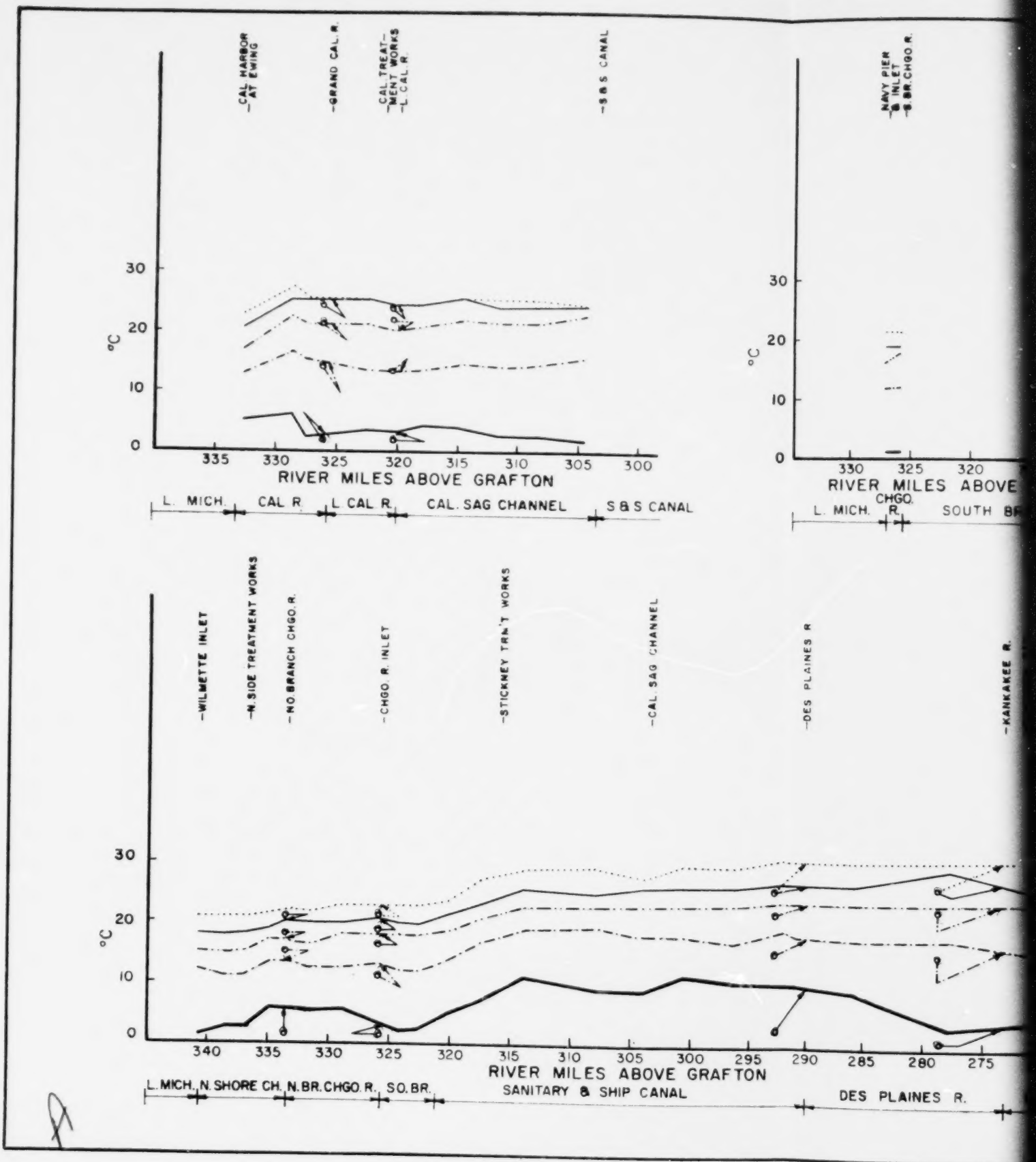
FIGURE IV-3

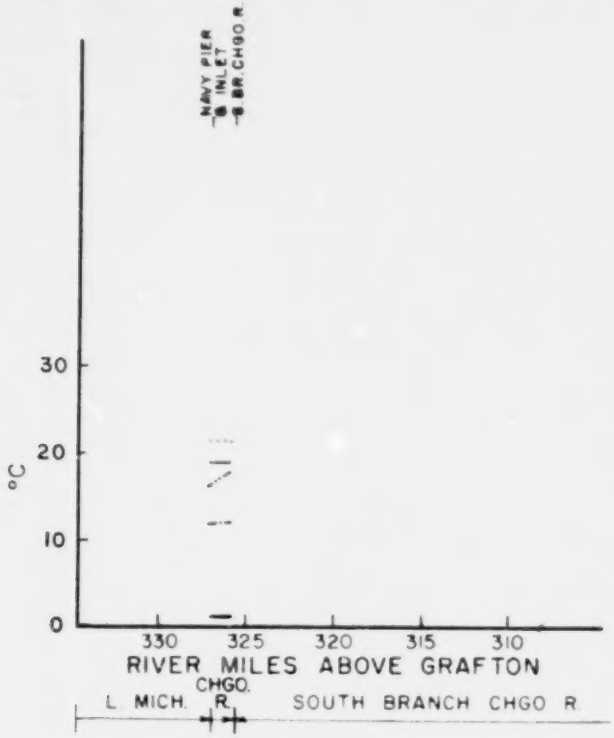
SAMPLE COLLECTION DATA SHEET

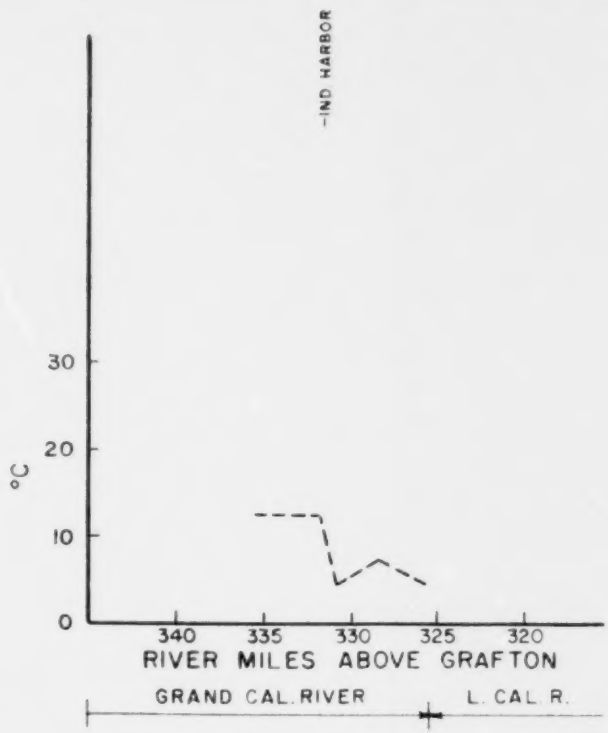
Sample Information	Sample condition							
	Sample temp. °C							
	Sample depth (ft.)							
Surface Water Conditions	Other (ice)							
	Algae							
	Fish dead							
	Boat passed							
	Garbage							
	Rubbish							
	Deter. suds							
	Bubbles							
	Oil							
	Clear							
	Sea (Beaufort)							
	Wind direction							
	Lake wind speed							
	Lake swell							
Weather Information	Atmospheric Cond.							
	Precipitation							
	Cloud type							
	Cloud cover							
	Wind direction							
	Wind strength							
	Air temperature							
Personnel Identification	Arrival at Lab.							
	Pick-up time							
	Courier							
	Sampler							
Station Identification	Hour							
	Year							
	Month							
	Day							
	Station No.							

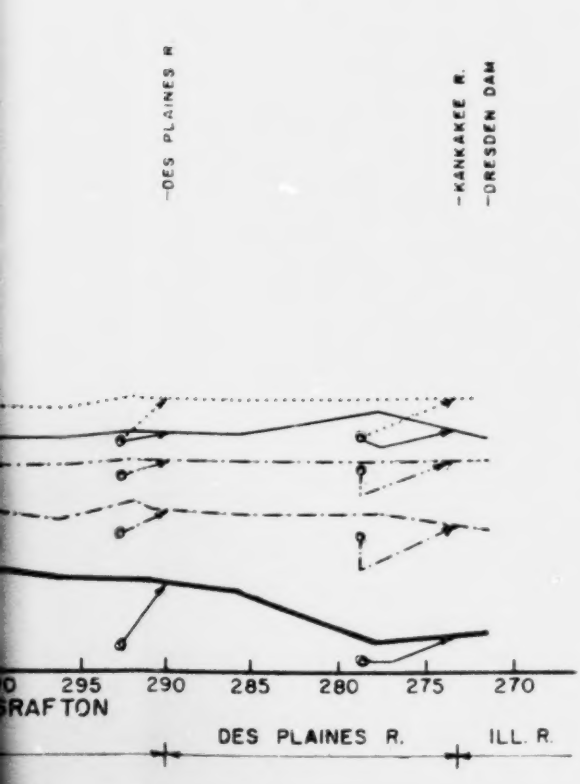
Area Code

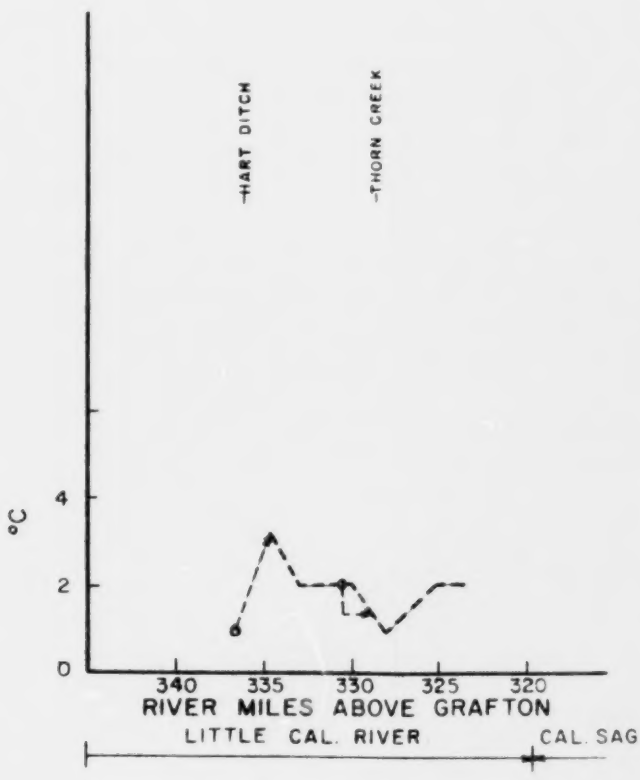
Figure IV-4


CAL. HARBOR AT EWING
GRAND CAL. R.
CAL. TREATMENT WORKS L. CAL. R.
S & S CANAL
°C
30
20
10
0
335
330
325
320
315
310
305
300
RIVER MILES ABOVE GRAFTON
L. MICH.
CAL R.
L CAL R.
CAL. SAG CHANNEL
S & S CANAL
NAVY PIER
S INLET
S BR. CHGO R.
330
325
320
RIVER MILES ABOVE
CHGO. R.
L. MICH.
SOUTH BR
WILMETTE INLET
N. SIDE TREATMENT WORKS
NO BRANCH CHGO. R.
CHGO. R. INLET
STICKNEY TRN'T WORKS
CAL. SAG CHANNEL
DES PLAINES R
KANKAKEE R.
340
335
330
325
320
315
310
305
300
295
290
285
280
275
RIVER MILES ABOVE GRAFTON
L. MICH.
N. SHORE CH.
N. BR. CHGO. R.
SO. BR.
SANITARY & SHIP CANAL
DES PLAINES R.

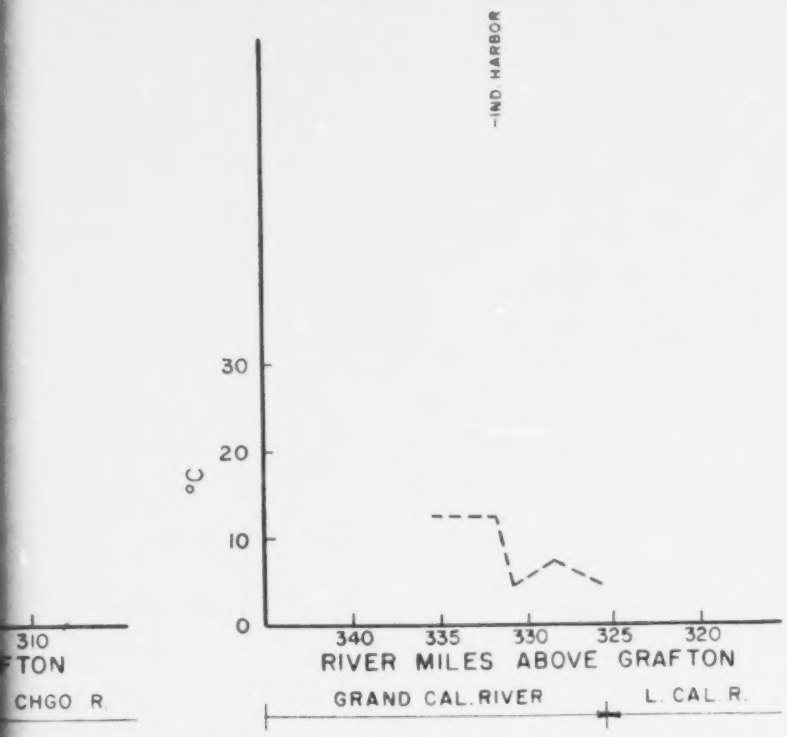

NAVY PIER
INLET
BR. CHGO R.
°C
30
20
10
0
330
325
320
315
310
RIVER MILES ABOVE GRAFTON
CHGO.
L. MICH. R.
SOUTH BRANCH CHGO R.


IND HARBOR
°C
30
20
10
0
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
GRAND CAL. RIVER
L. CAL R.


DES PLAINES R
KANKAKEE R.
DRESDEN DAM
295
290
285
280
275
270
GRAFTON
DES PLAINES R.
ILL. R.


HART DITCH
THORN CREEK
°C
4
2
0
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
LITTLE CAL. RIVER
CAL. SAG

B



LEGEND

TEMPERATURE AVERAGES

APRIL – MAY

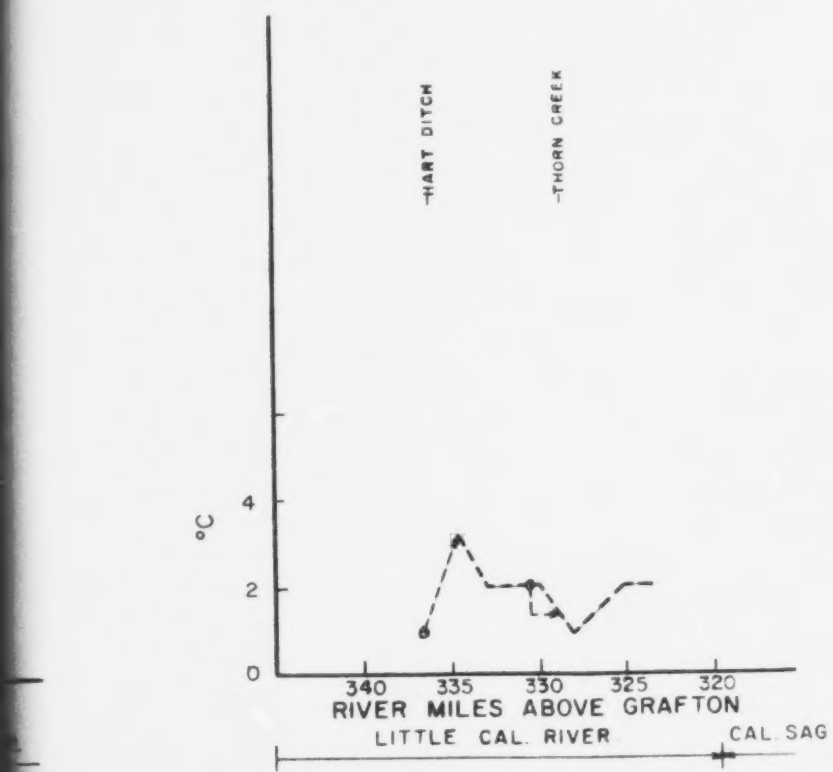
JUNE

JULY

AUGUST

JAN., FEB.

FEB., MARCH



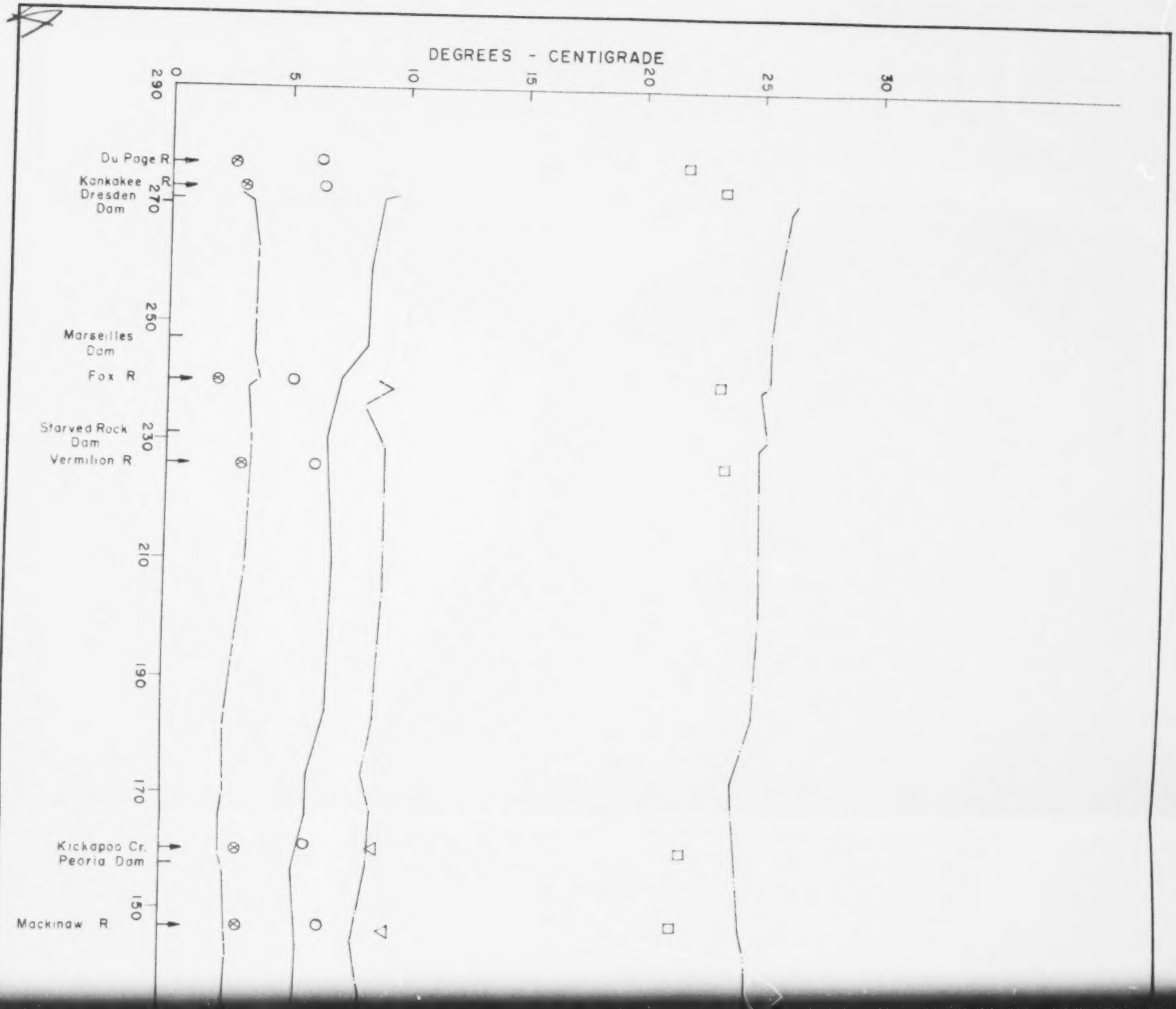
GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

TEMPERATURE AVERAGES

APRIL–MAY, JUNE, JULY, & AUG. 1961
JAN., FEB., MARCH, 1962
UPPER ILLINOIS RIVER BASIN

DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V. CHICAGO, ILLINOIS

FIGURE V-1


DEGREES - CENTIGRADE
0
5
10
15
20
25
30
290
270
250
230
210
190
170
150
Du Page R
Kankakee R
Dresden Dam
Marseilles Dam
Fox R
Starved Rock Dam
Vermilion R
Kickapoo Cr.
Peoria Dam
Mackinaw R

190
170
150
130
110
90
70
50
30
Kickapoo Cr
Peoria Dam
Mackinaw R
Spoon R
Sangamon R
LaMoine R
LaGrange Dam
Macoupin Cr.

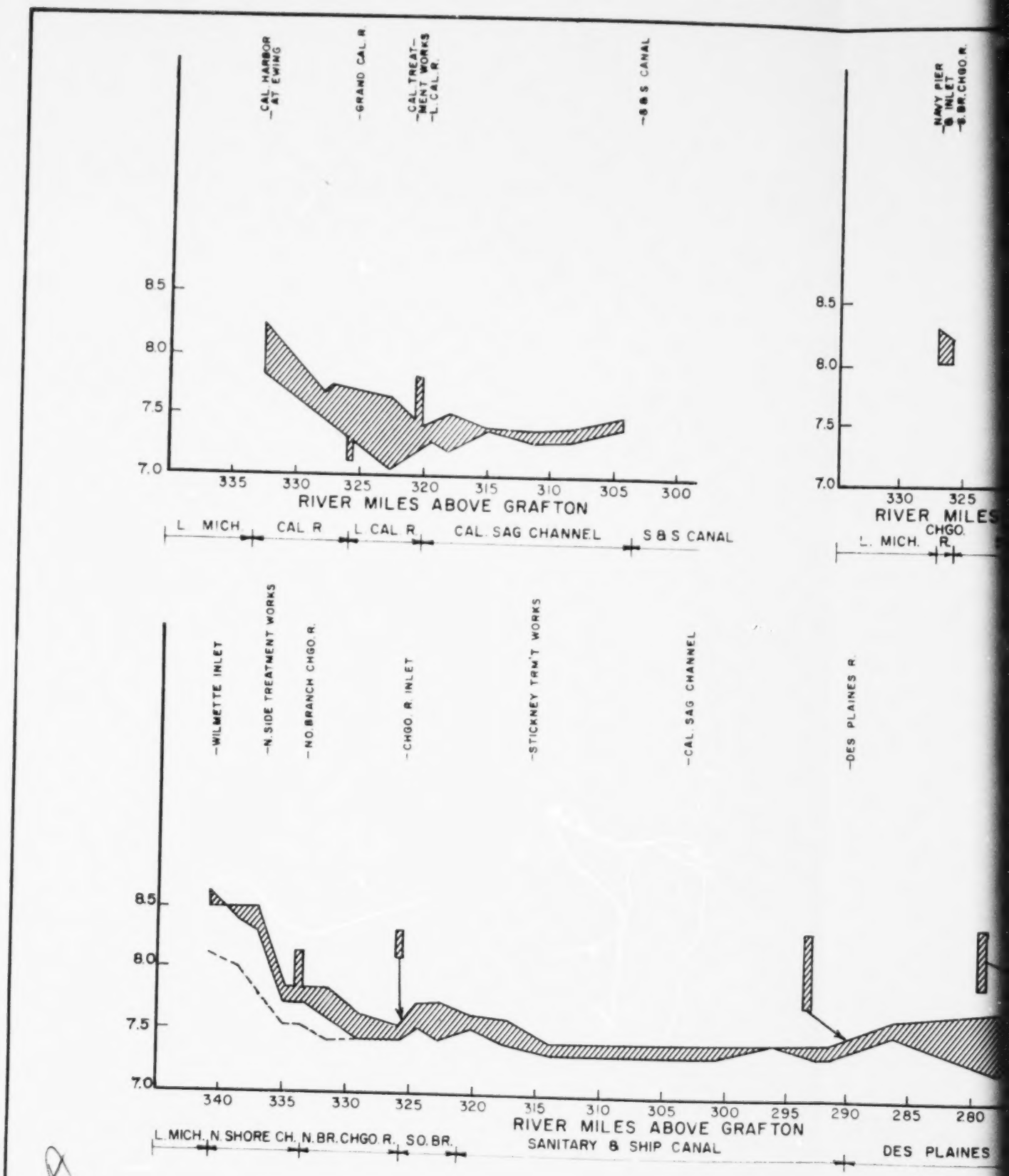
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

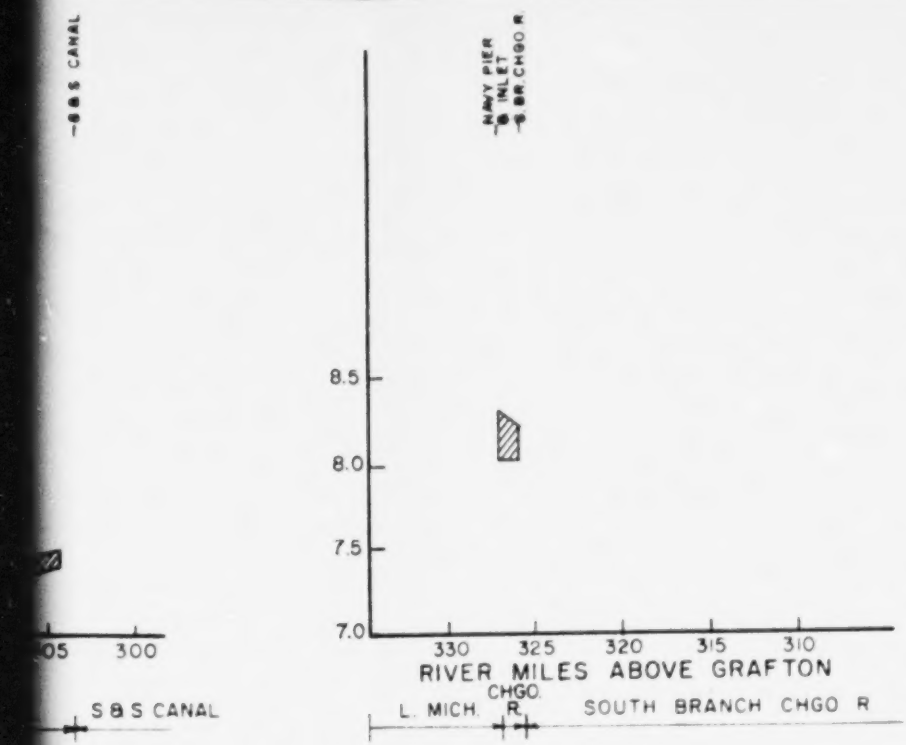
TEMPERATURE AVERAGES
LOWER ILLINOIS RIVER SYSTEM

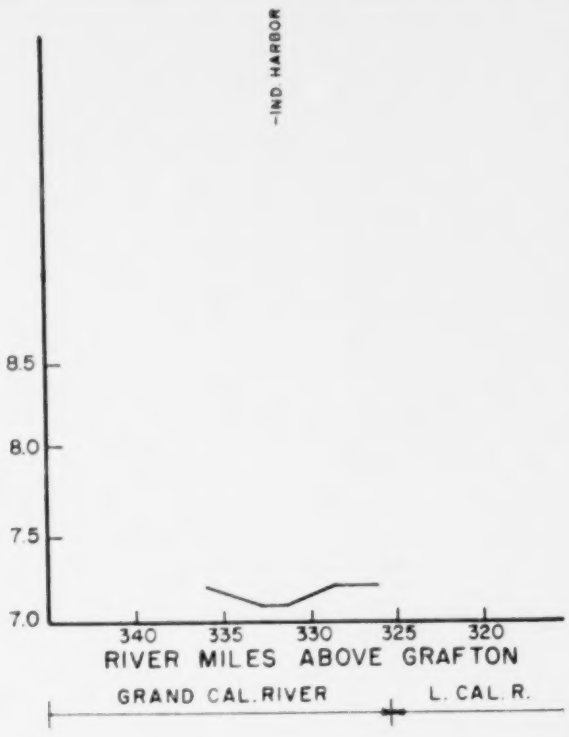
DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

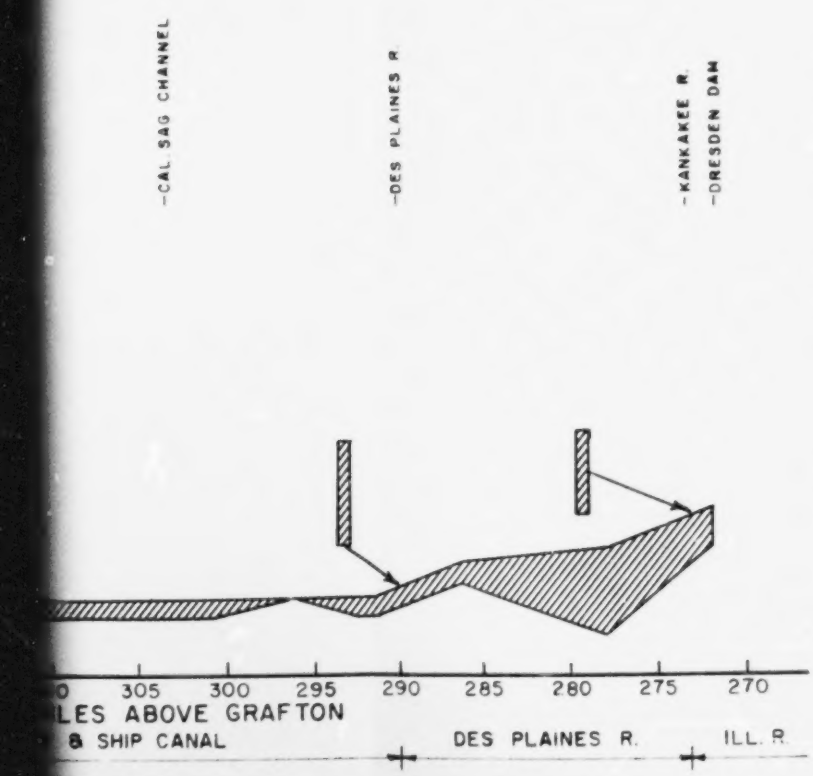
B

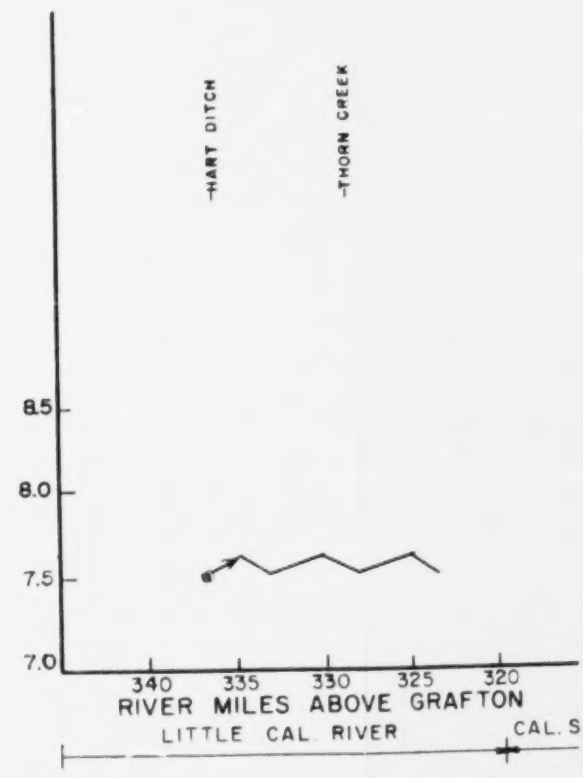
FIGURE V-2

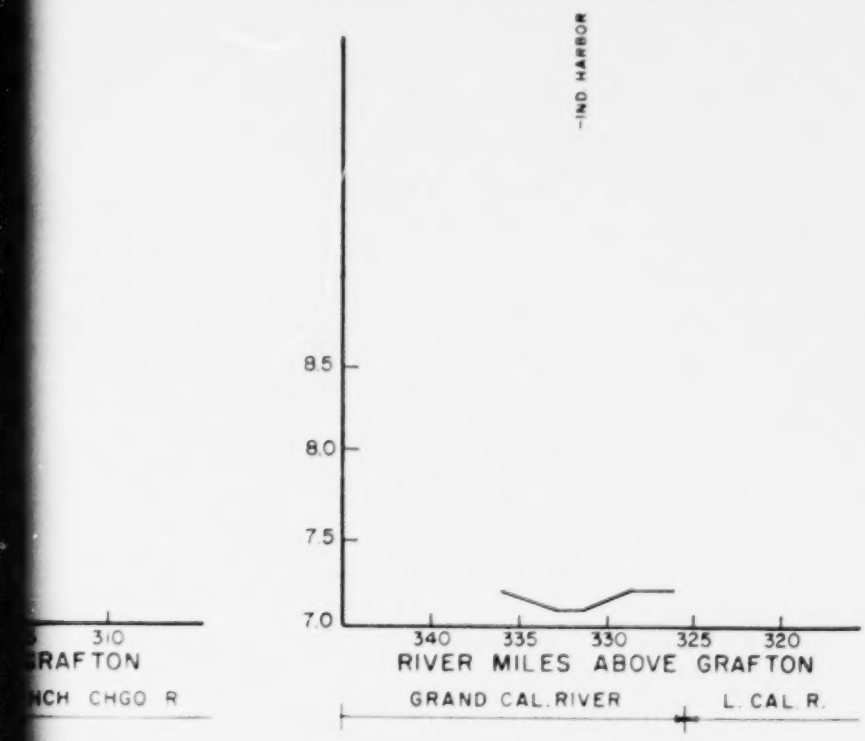

CAL. HARBOR AT EWING
GRAND CAL. R.
CAL. TREATMENT WORKS L. CAL. R.
S & S CANAL
8.5
8.0
7.5
7.0
335 330 325 320 315 310 305 300
RIVER MILES ABOVE GRAFTON
L. MICH.
CAL R
L. CAL R.
CAL. SAG CHANNEL
S & S CANAL
NAVY PIER INLET
S. BR. CHGO R.
330 325
RIVER MILES
CHGO. R.
L. MICH.
WILMETTE INLET
N. SIDE TREATMENT WORKS
NO. BRANCH CHGO R.
CHGO. R. INLET
STICKNEY TRM'T WORKS
CAL. SAG CHANNEL
DES PLAINES R.
8.5
8.0
7.5
7.0
340 335 330 325 320 315 310 305 300 295 290 285 280
RIVER MILES ABOVE GRAFTON
L. MICH., N. SHORE CH., N. BR. CHGO R., SO. BR.
SANITARY & SHIP CANAL
DES PLAINES


-S & S CANAL
NAVY PIER
-S BR CHGO R
8.5
8.0
7.5
7.0
330
325
320
315
310
RIVER MILES ABOVE GRAFTON
L. MICH.
CHGO.
R.
SOUTH BRANCH CHGO R
05
300
S & S CANAL


-IND. HARBOR
8.5
8.0
7.5
7.0
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
GRAND CAL. RIVER
L. CAL. R.


-CAL. SAG CHANNEL
-DES PLAINES R.
-KANKAKEE R.
-DRESDEN DAM
0
305
300
295
290
285
280
275
270
LES ABOVE GRAFTON
& SHIP CANAL
DES PLAINES R.
ILL. R.


-HART DITCH
-THORN CREEK
8.5
8.0
7.5
7.0
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
LITTLE CAL RIVER
CAL. SAG

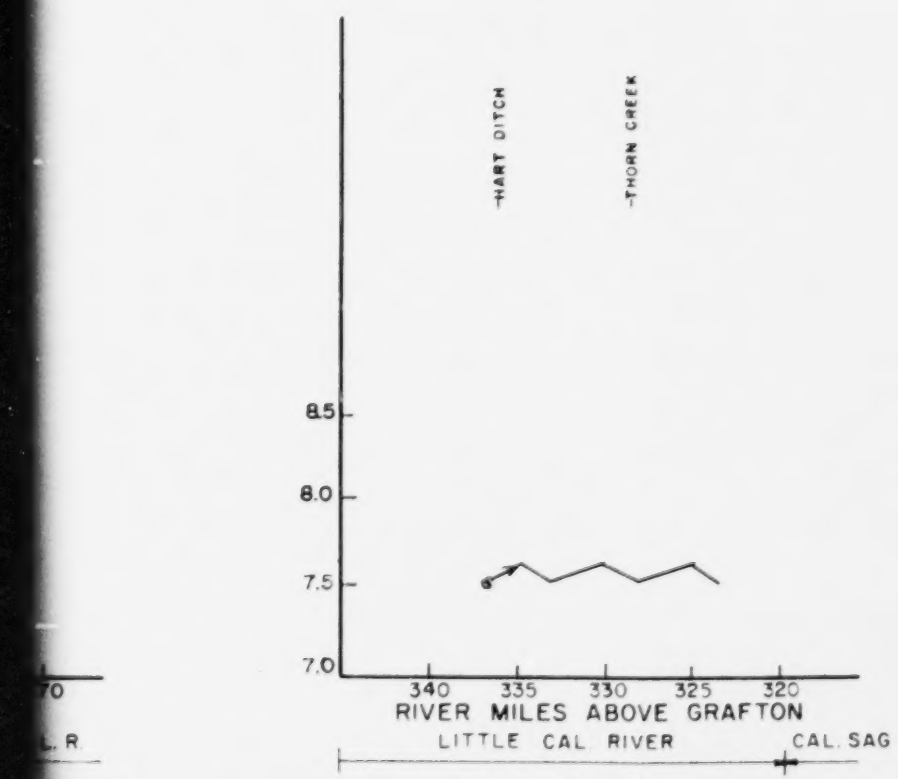


LEGEND

APR. — AUG. 1961

JAN. 1962

FEB.



GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

pH RANGES

APR. — AUG. 1961 JAN., FEB. 1962

UPPER ILLINOIS RIVER SYSTEM

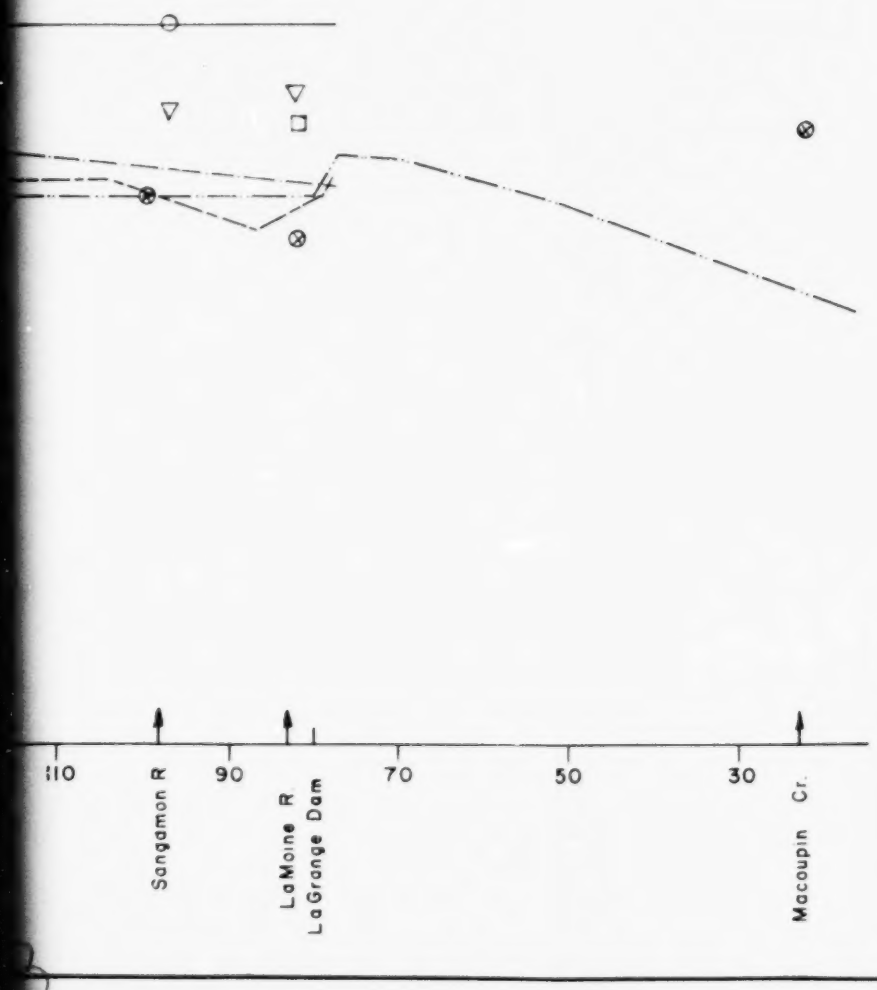
DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE

REGION V CHICAGO, ILLINOIS

FIGURE V-3

9
8
7
6
290
270
250
230
210
190
170
150
Du Page R
Kankakee R
Dresden Dam
Marseilles Dam
Fox R
Starved Rock Dam
Vermilion R
Kickapoo Cr.
Peoria Dam
Mackinaw R.

190
170
150
130
110
90
70
50
30
Kickapoo Cr.
Peoria Dam
Mackinaw R.
Spoon R.
Sangamon R.
LaMoine R.
LaGrange Dam
Macoupin Cr.

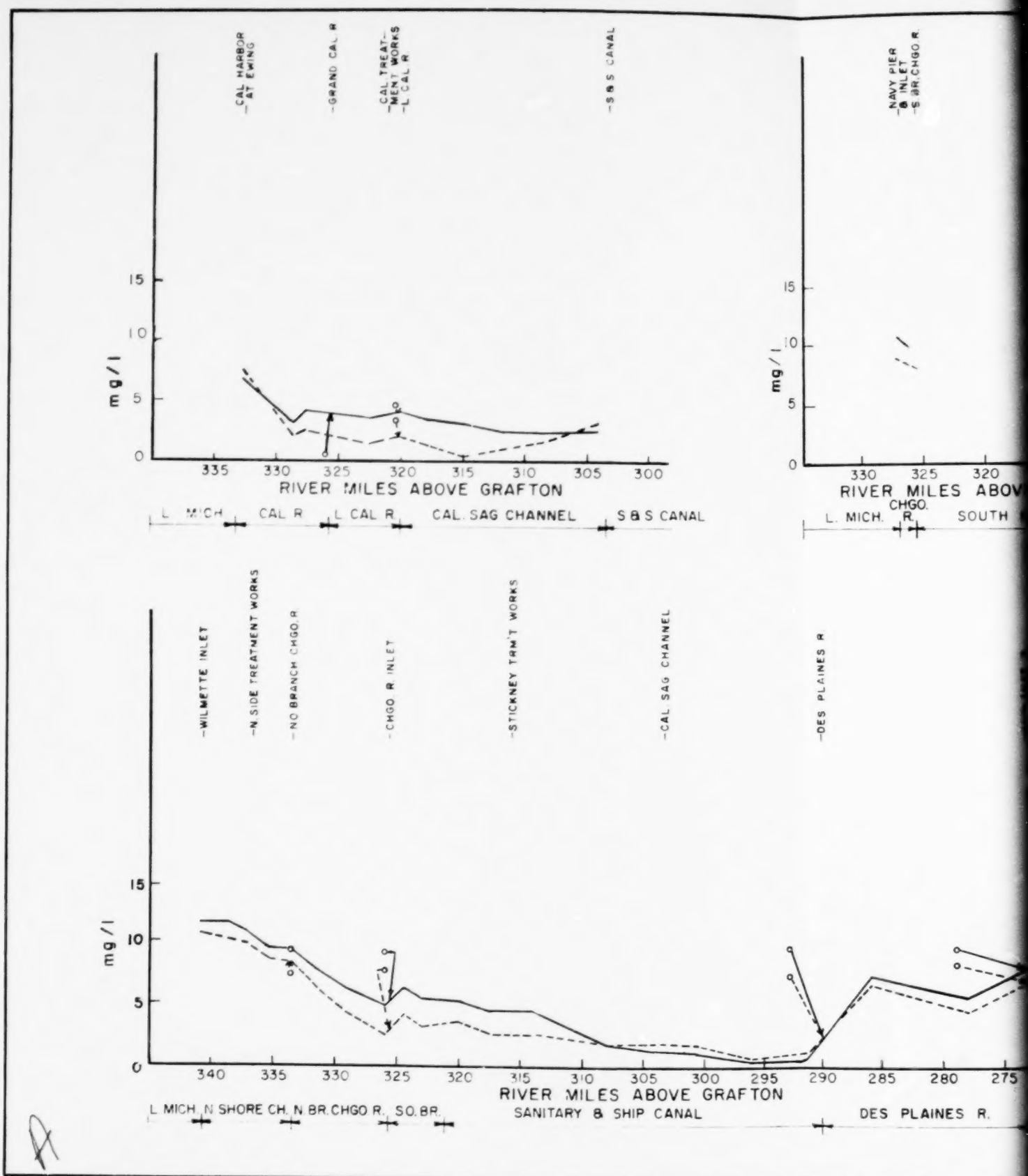


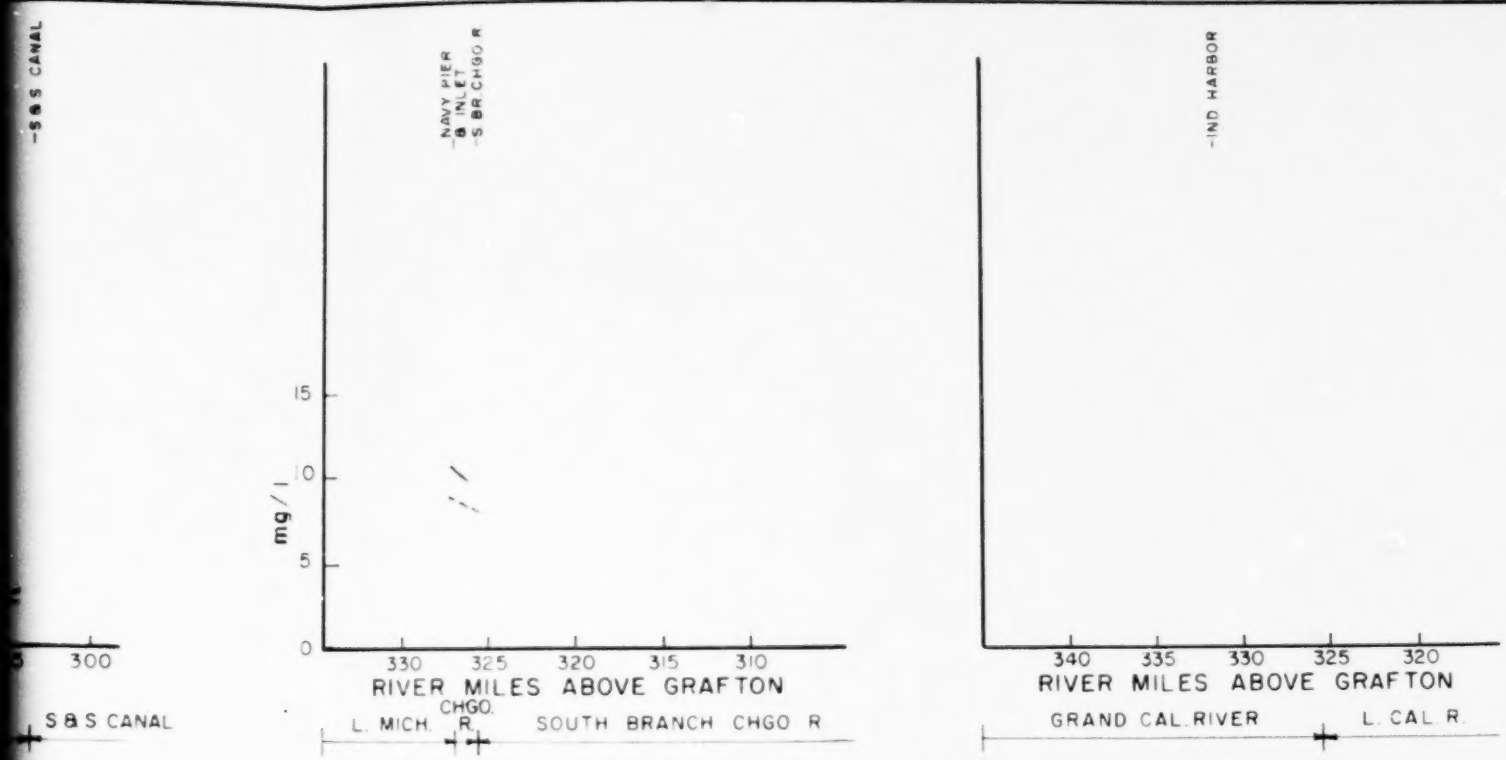
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

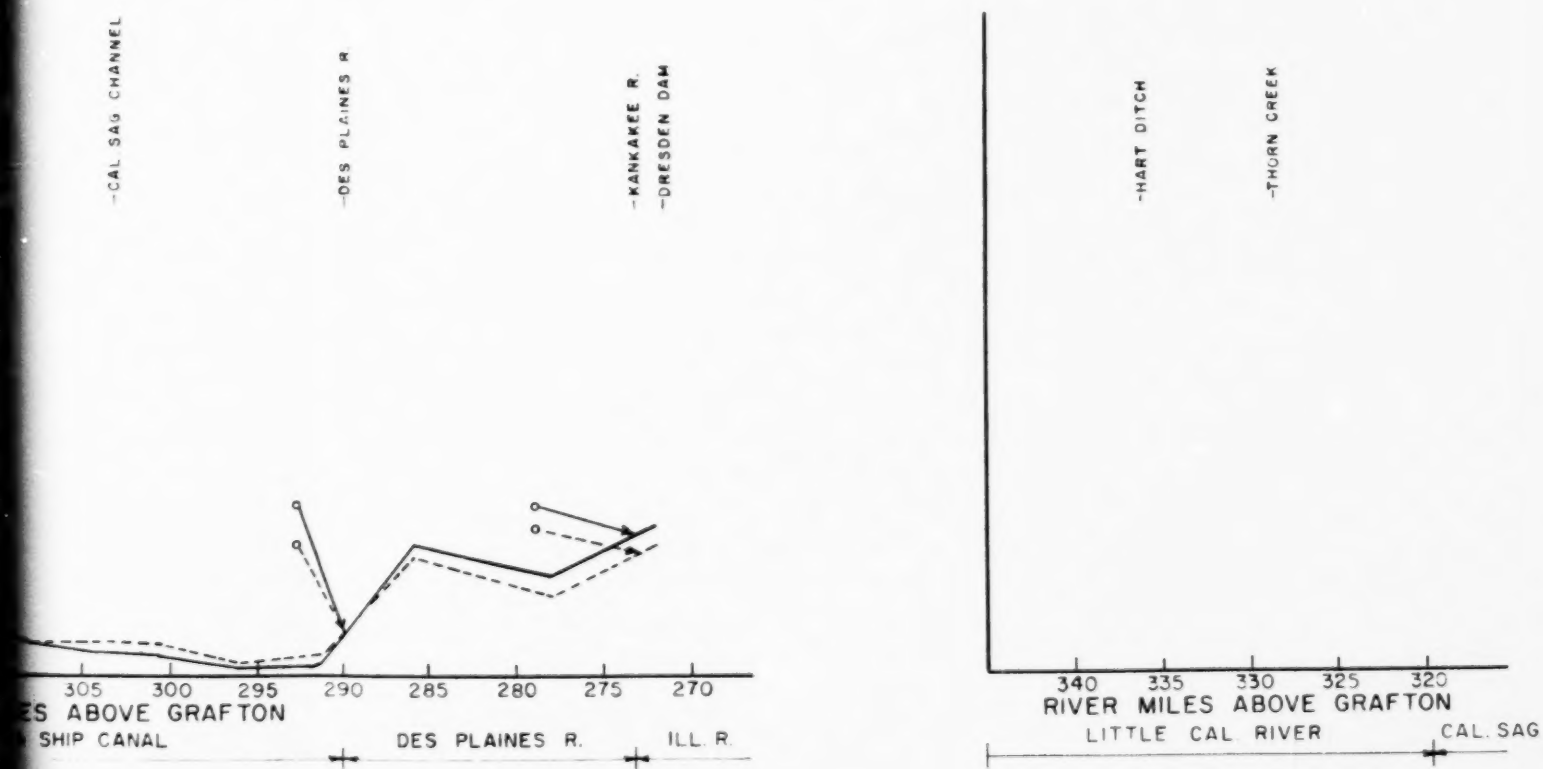
pH AVERAGES
LOWER ILLINOIS RIVER SYSTEM

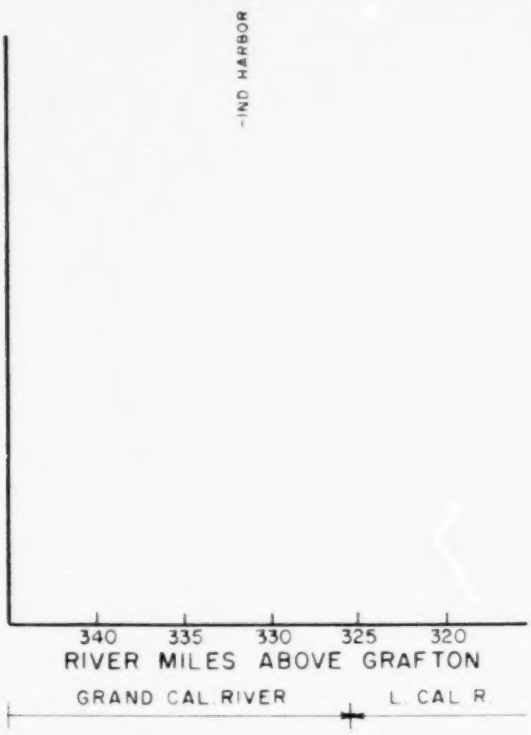
DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

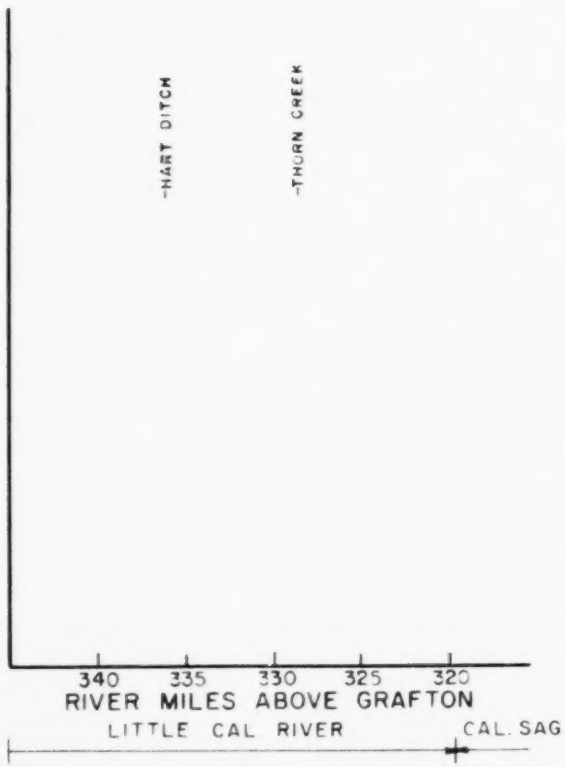
FIGURE V-4


CAL HARBOR AT EWING
GRAND CAL R
CAL TREAT-MENT WORKS L CAL R
S & S CANAL
NAVY PIER & INLET S BR CHGO R
mg/l
15
10
5
0
335 330 325 320 315 310 305 300
RIVER MILES ABOVE GRAFTON
L. MICH
CAL R
L CAL R
CAL. SAG CHANNEL
S & S CANAL
330 325 320
RIVER MILES ABOV
CHGO. R.
L. MICH.
SOUTH
WILMETTE INLET
N SIDE TREATMENT WORKS
NO BRANCH CHGO R
CHGO R INLET
STICKNEY TRM'T WORKS
CAL SAG CHANNEL
DES PLAINES R
mg/l
15
10
5
0
340 335 330 325 320 315 310 305 300 295 290 285 280 275
RIVER MILES ABOVE GRAFTON
L MICH. N SHORE CH. N BR CHGO R. SO. BR.
SANITARY & SHIP CANAL
DES PLAINES R.


-S & S CANAL
300
S & S CANAL
-NAVY PIER
-B. INLET
-S BR CHGO R
15
10
5
0
mg/l
330
325
320
315
310
RIVER MILES ABOVE GRAFTON
L. MICH.
CHGO. R.
SOUTH BRANCH CHGO R
-IND HARBOR
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
GRAND CAL. RIVER
L. CAL R.


-CAL SAG CHANNEL
-DES PLAINES R
-KANKAKEE R.
-DRESDEN DAM
305
300
295
290
285
280
275
270
ES ABOVE GRAFTON
SHIP CANAL
DES PLAINES R.
ILL. R.
-HART DITCH
-THORN CREEK
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
LITTLE CAL RIVER
CAL. SAG





LEGEND

APRIL-MAY ———

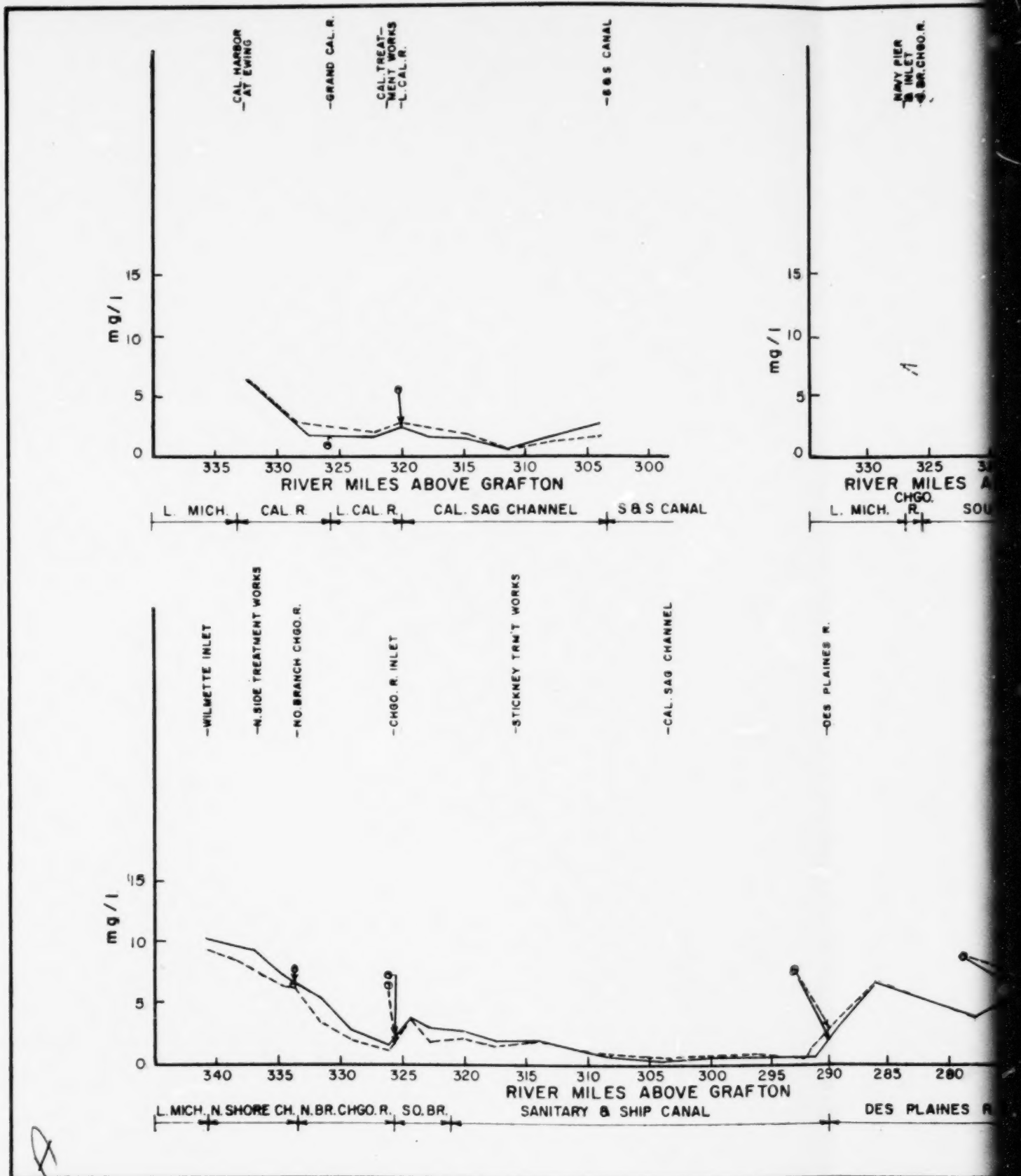
JUNE - - - - - - - -

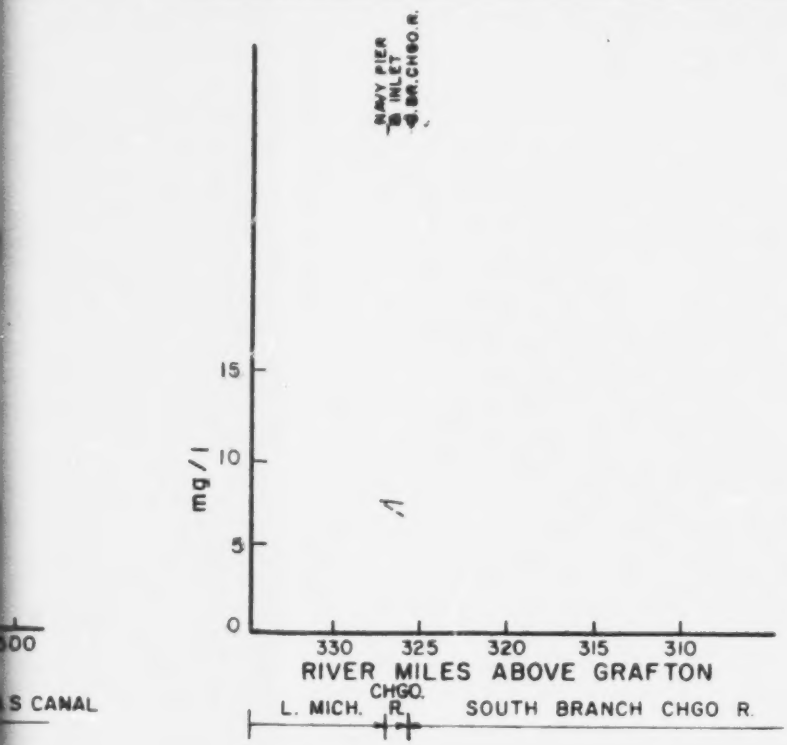
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

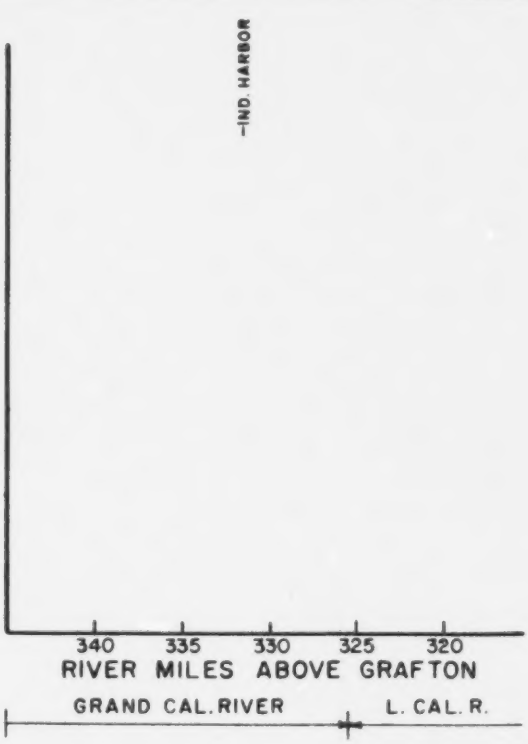
D. O. AVERAGES
APRIL-MAY & JUNE 1961
UPPER ILLINOIS RIVER SYSTEM

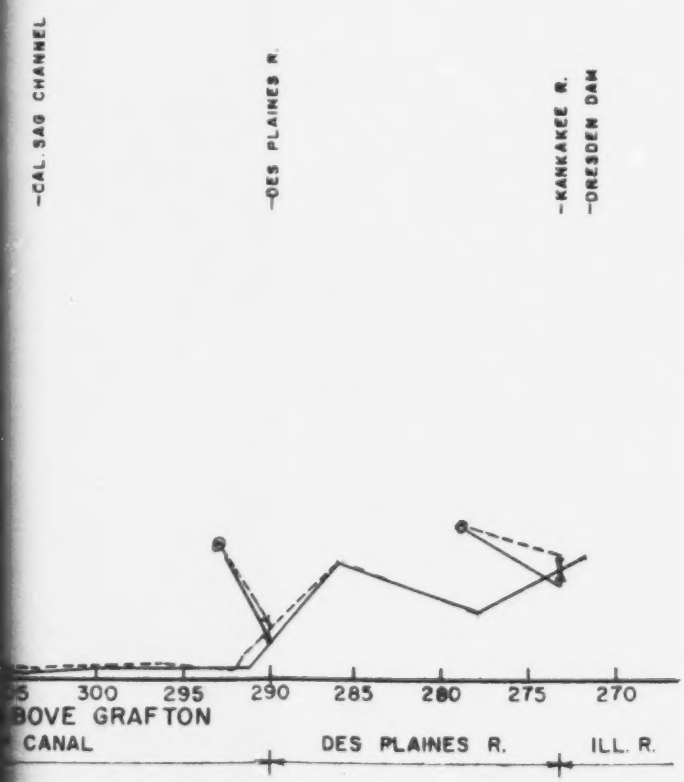
DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

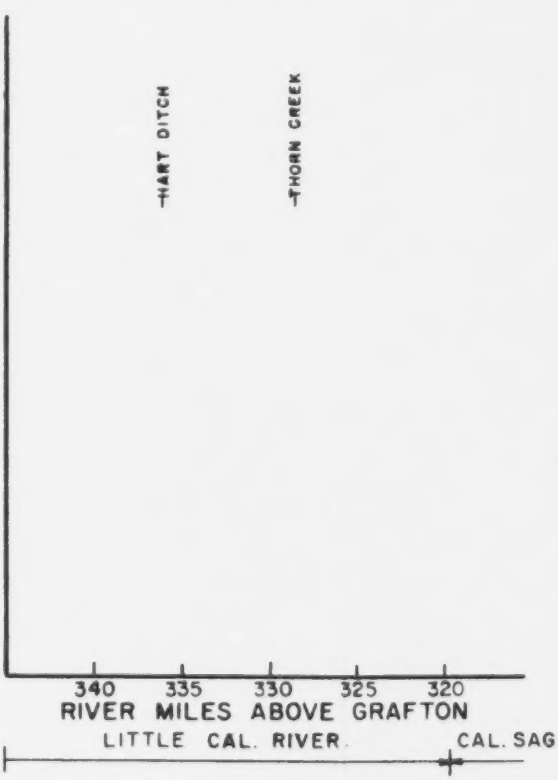
FIGURE V-5

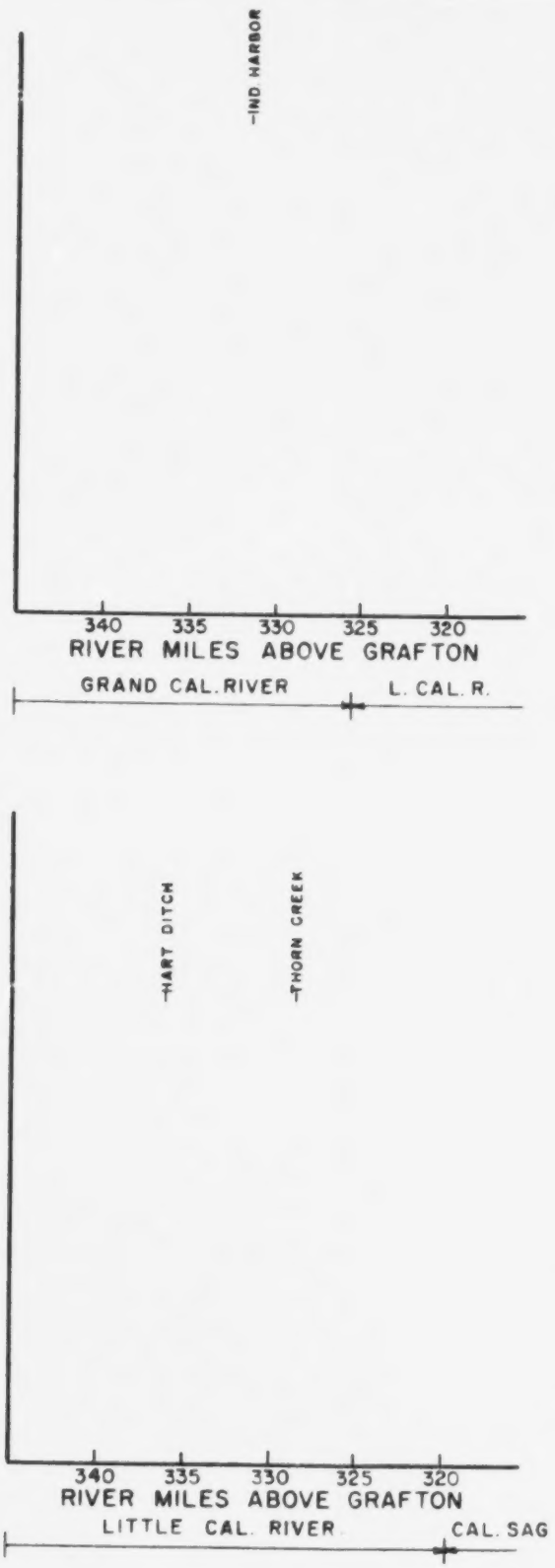

CAL. HARBOR AT EWING
GRAND CAL. R.
CAL. TREATMENT WORKS L. CAL. R.
S & S CANAL
mg/l
15
10
5
0
335
330
325
320
315
310
305
300
RIVER MILES ABOVE GRAFTON
L. MICH.
CAL R.
L. CAL. R.
CAL. SAG CHANNEL
S & S CANAL
NAVY PIER INLET
S. BR. CHGO. R.
CHGO. R.
WILMETTE INLET
N. SIDE TREATMENT WORKS
NO. BRANCH CHGO. R.
CHGO. R. INLET
STICKNEY TRM'T WORKS
CAL. SAG CHANNEL
DES PLAINES R.
340
335
330
325
320
315
310
305
300
295
290
285
280
L. MICH.
N. SHORE CH.
N. BR. CHGO. R.
SO. BR.
SANITARY & SHIP CANAL
DES PLAINES R


NAVY PIER
B INLET
BR. CHGO. R.
15
10
5
0
mg/l
330
325
320
315
310
RIVER MILES ABOVE GRAFTON
L. MICH.
CHGO. R.
SOUTH BRANCH CHGO R.


IND. HARBOR
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
GRAND CAL. RIVER
L. CAL. R.


CAL. SAG CHANNEL
DES PLAINES R.
KANKAKEE R.
DRESDEN DAM
300
295
290
285
280
275
270
BOVE GRAFTON
CANAL
DES PLAINES R.
ILL. R.


HART DITCH
THORN CREEK
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
LITTLE CAL. RIVER
CAL. SAG



LEGEND

JULY ———

AUGUST --------

GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

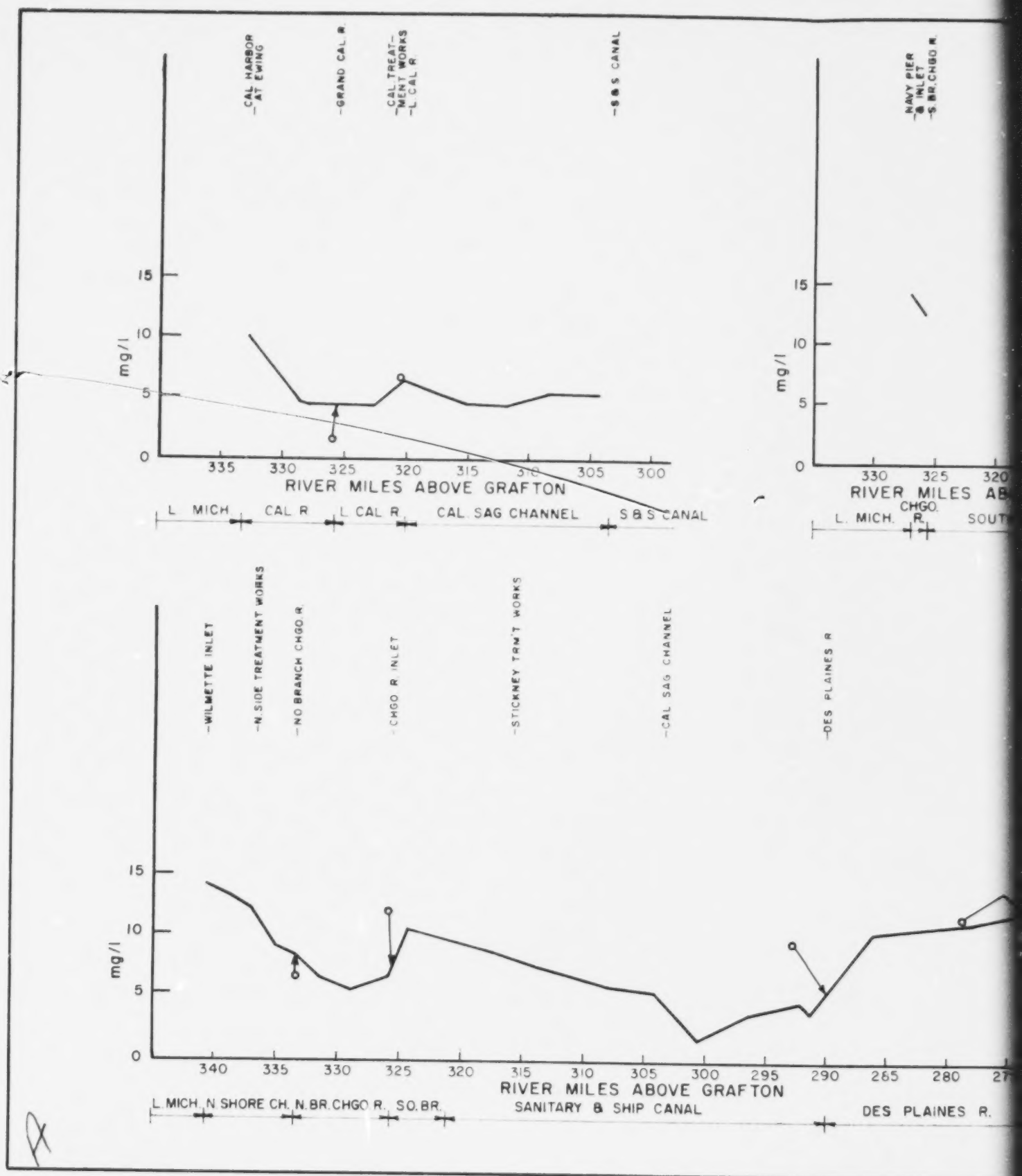
D. O. AVERAGES

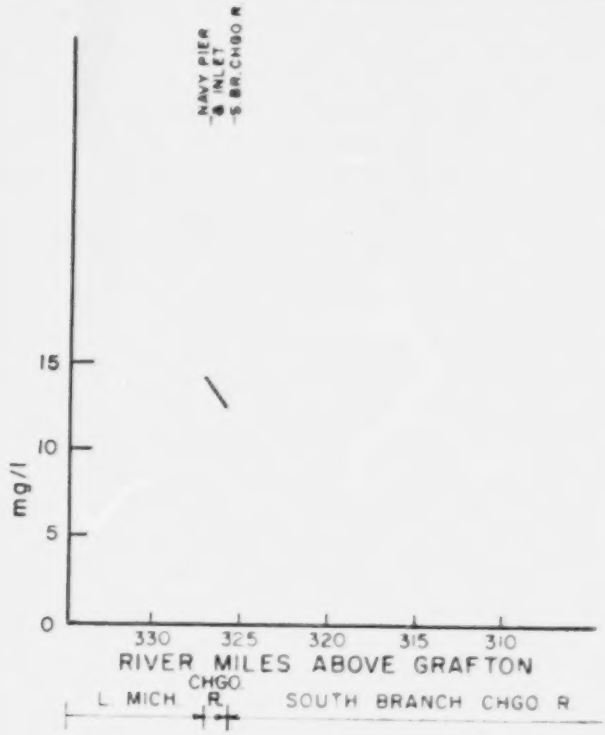
JULY & AUGUST 1961
UPPER ILLINOIS RIVER SYSTEM

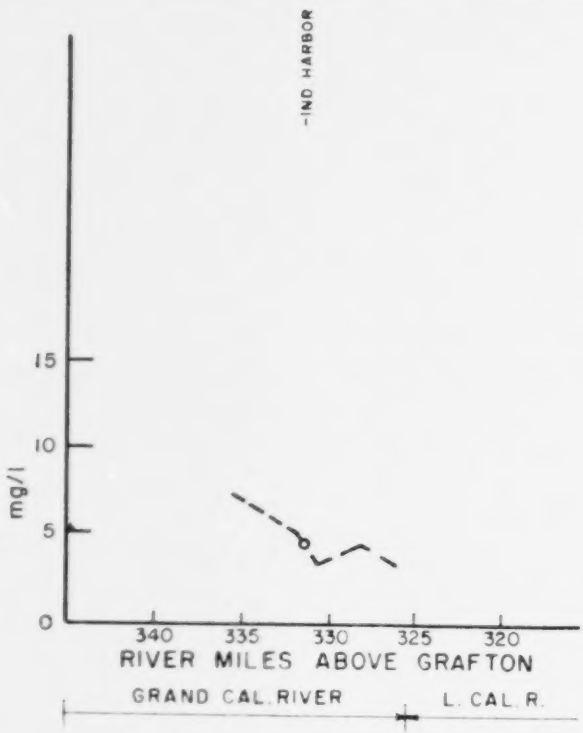
DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE

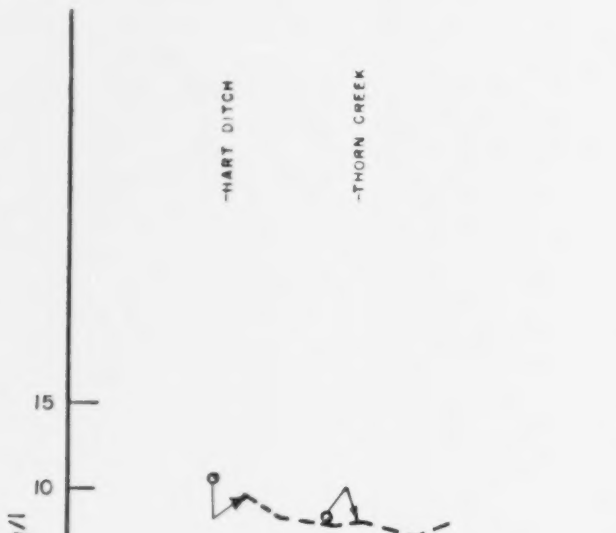
REGION V CHICAGO, ILLINOIS

FIGURE V-6

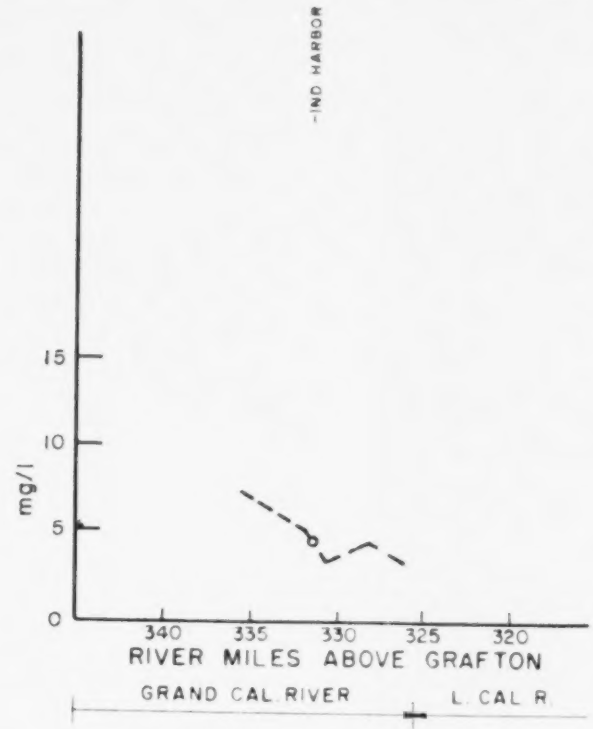

CAL HARBOR AT EWING
GRAND CAL. R.
CAL. TREAT-MENT WORKS L. CAL R.
S.B.S CANAL
mg/l
15
10
5
0
335
330
325
320
315
310
305
300
RIVER MILES ABOVE GRAFTON
L. MICH
CAL R
L. CAL R.
CAL SAG CHANNEL
S.B.S CANAL
NAVY PIER & INLET S. BR. CHGO R.
330
325
320
CHGO. R.
L. MICH.
SOUT
WILMETTE INLET
N. SIDE TREATMENT WORKS
NO BRANCH CHGO R.
CHGO R. INLET
STICKNEY TRM'T WORKS
CAL SAG CHANNEL
DES PLAINES R
340
335
330
325
320
315
310
305
300
295
290
285
280
RIVER MILES ABOVE GRAFTON
L. MICH. N. SHORE CH. N. BR. CHGO R. SO. BR.
SANITARY & SHIP CANAL
DES PLAINES R.







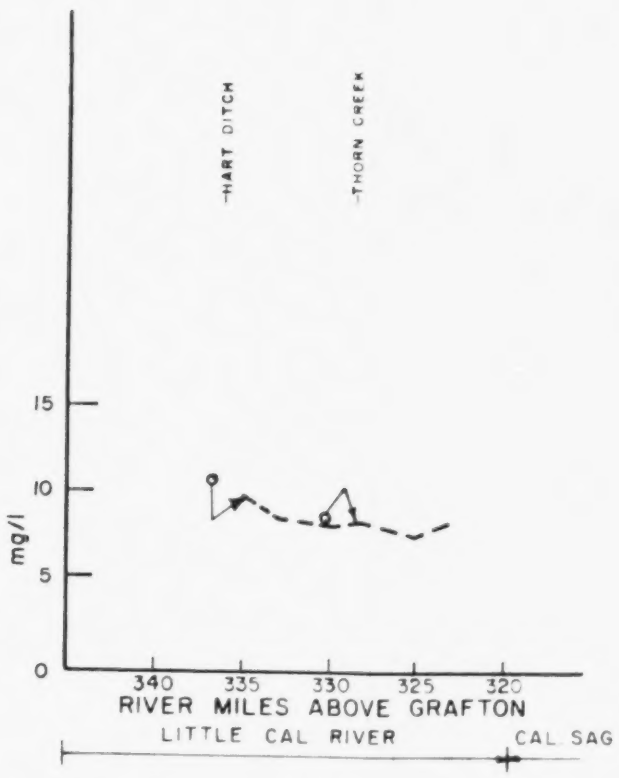
GREA
RIV
D.
J
UPPER
DEPT. OF
P
REGION V



LEGEND

JAN. ——————

FEB. – – – –



GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

D. O. AVERAGES

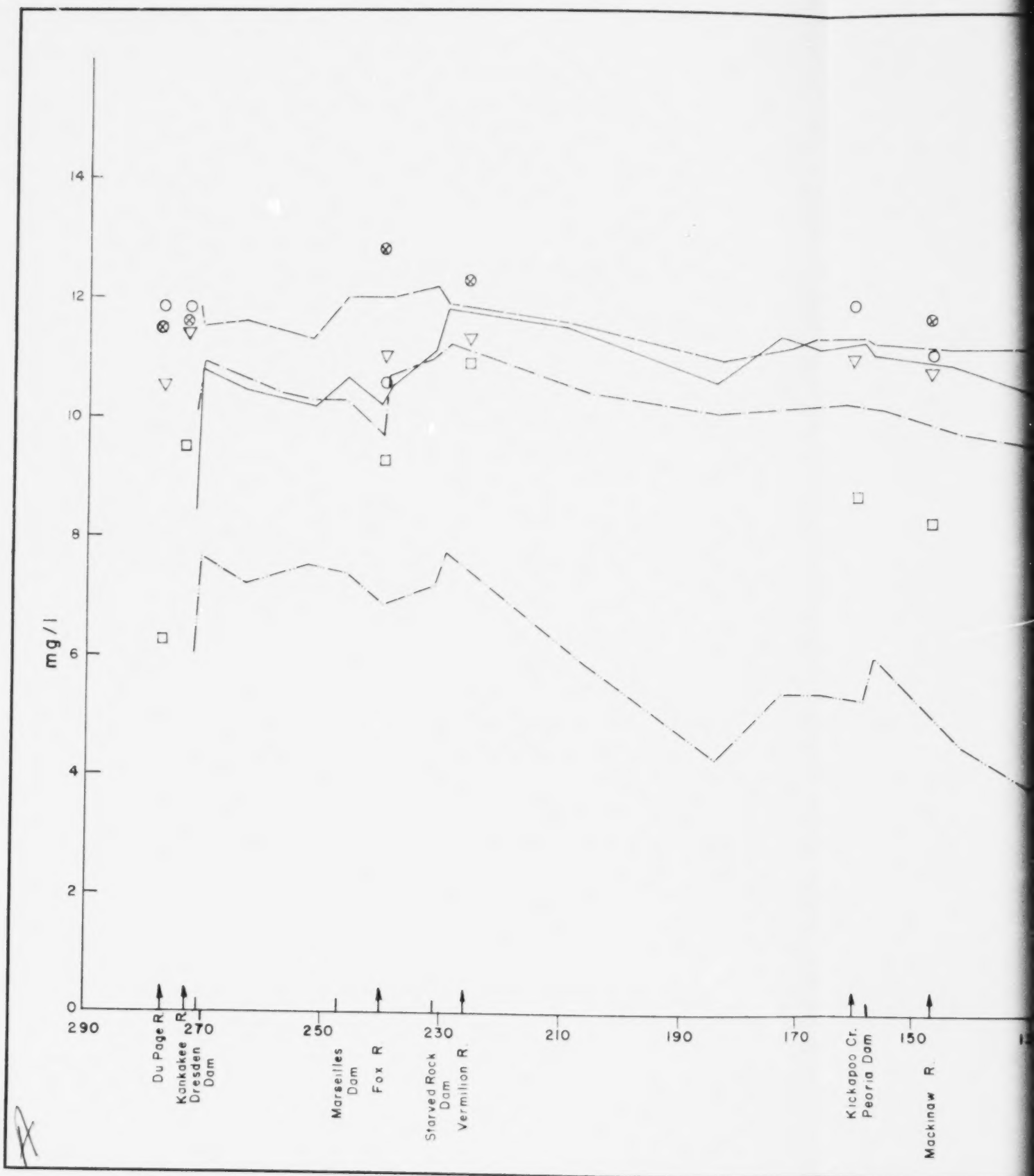
JAN. & FEB. 1962

UPPER ILLINOIS RIVER BASIN

DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE

REGION V CHICAGO, ILLINOIS

 FIGURE V-7


mg/l
14
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6
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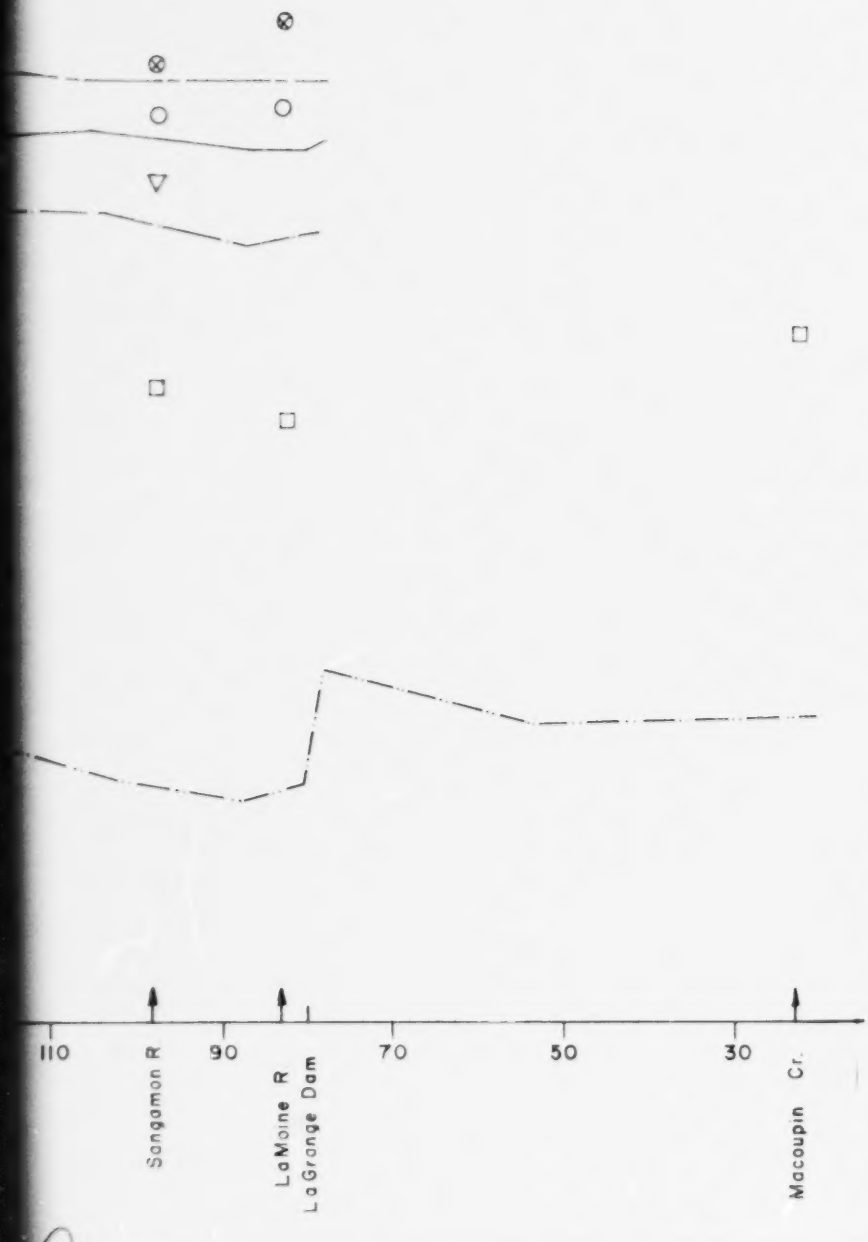
290
270
250
230
210
190
170
150
Du Page R.
Kankakee R.
Dresden Dam
Marseilles Dam
Fox R.
Starved Rock Dam
Vermilion R.
Kickapoo Cr.
Peoria Dam
Mackinaw R.

170
Kickapoo Cr.
Peoria Dam
150
Mackinaw R.
130
Spoon R.
110
Sangamon R.
90
LaMoine R.
LaGrange Dam
70
50
30
Macoupin Cr.

LOW
DE
RE



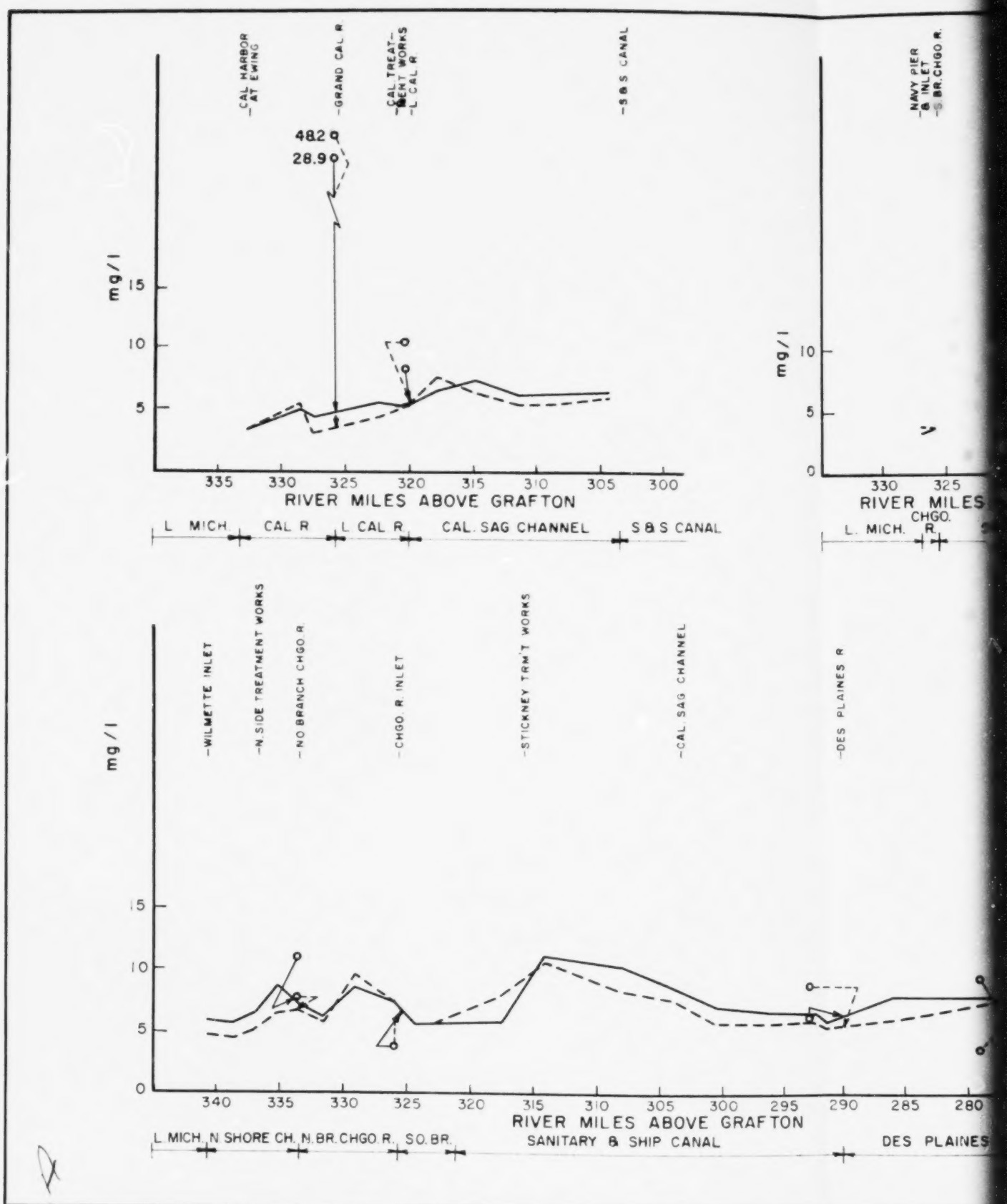
GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

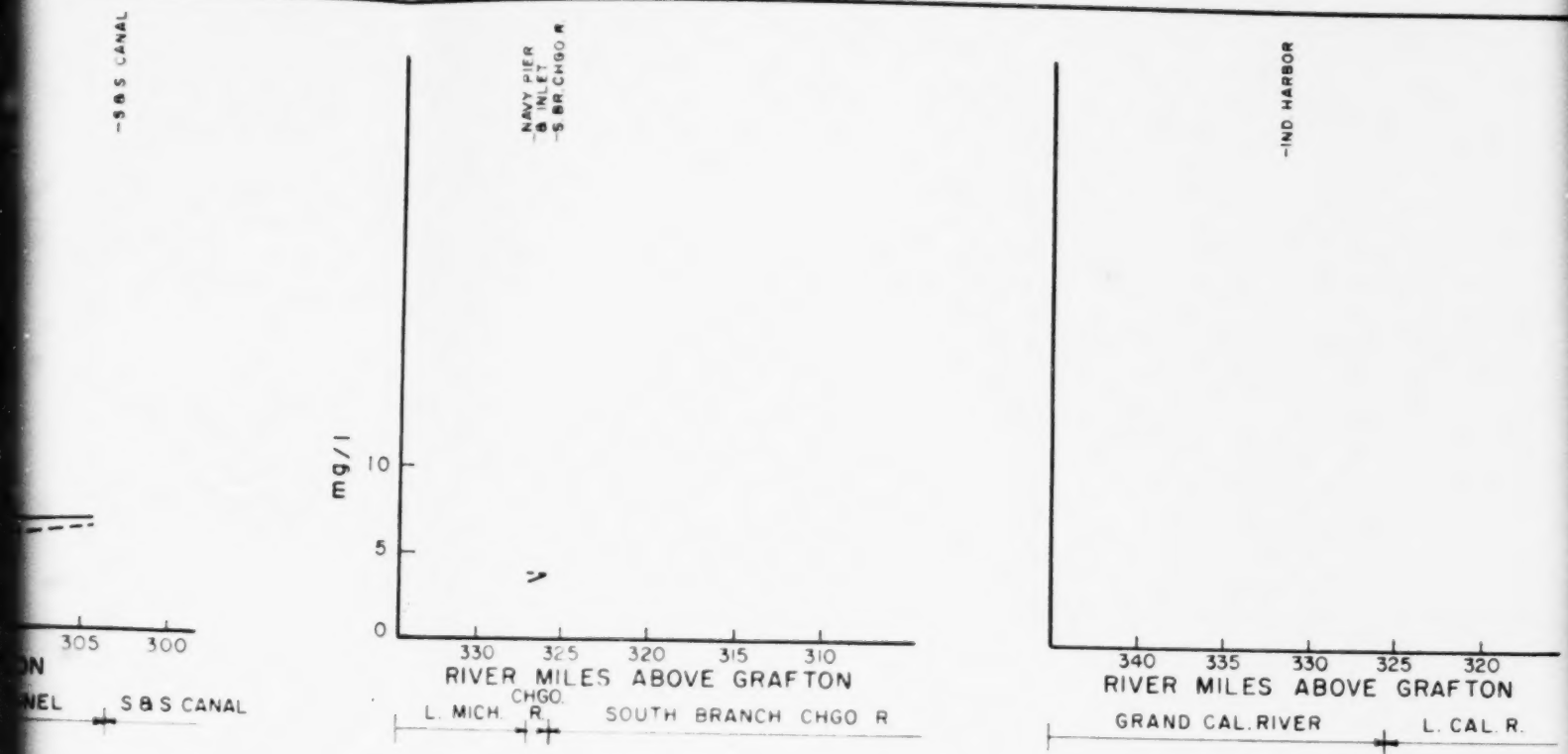
D. O. AVERAGES

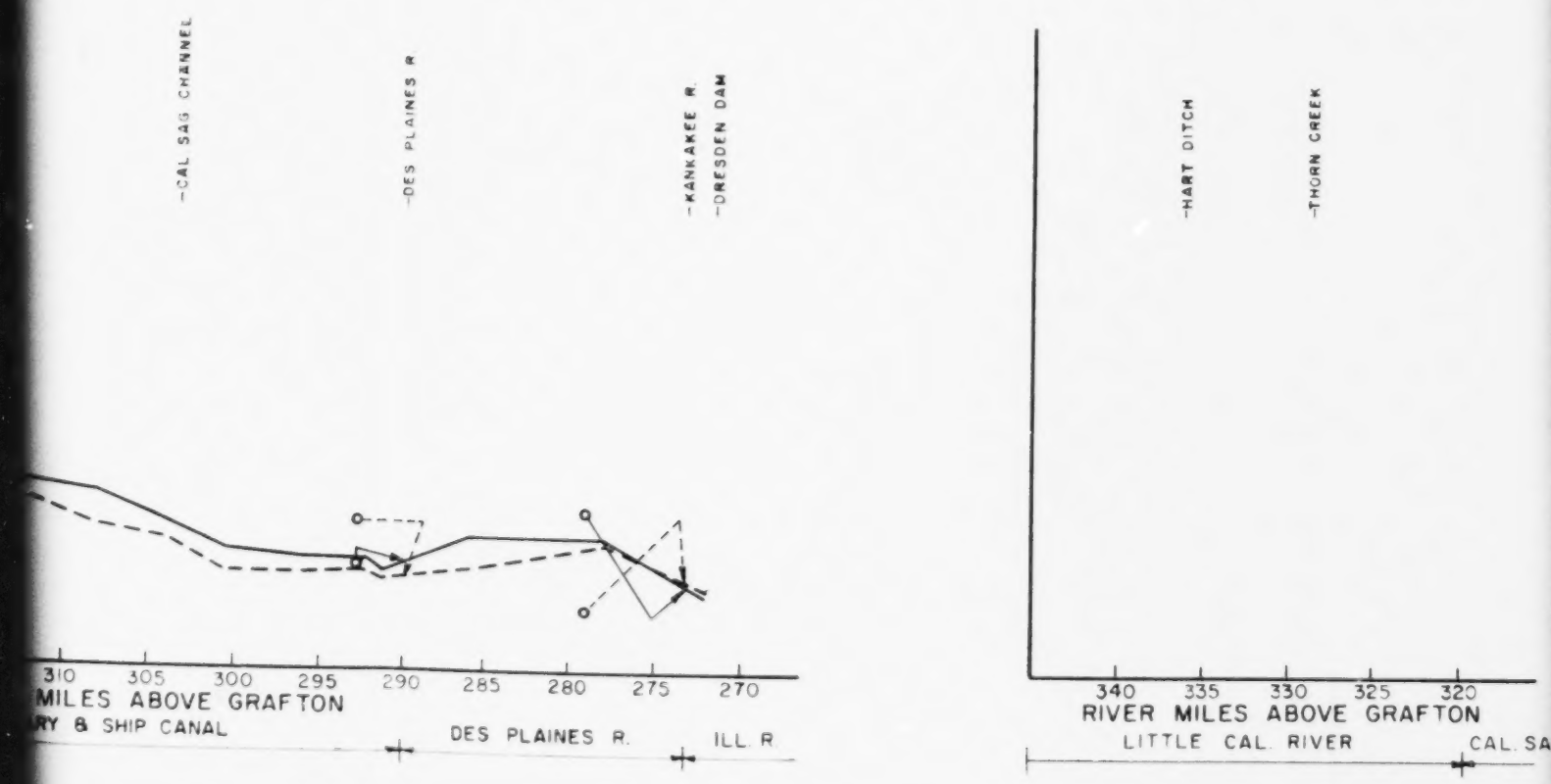
LOWER ILLINOIS RIVER SYSTEM

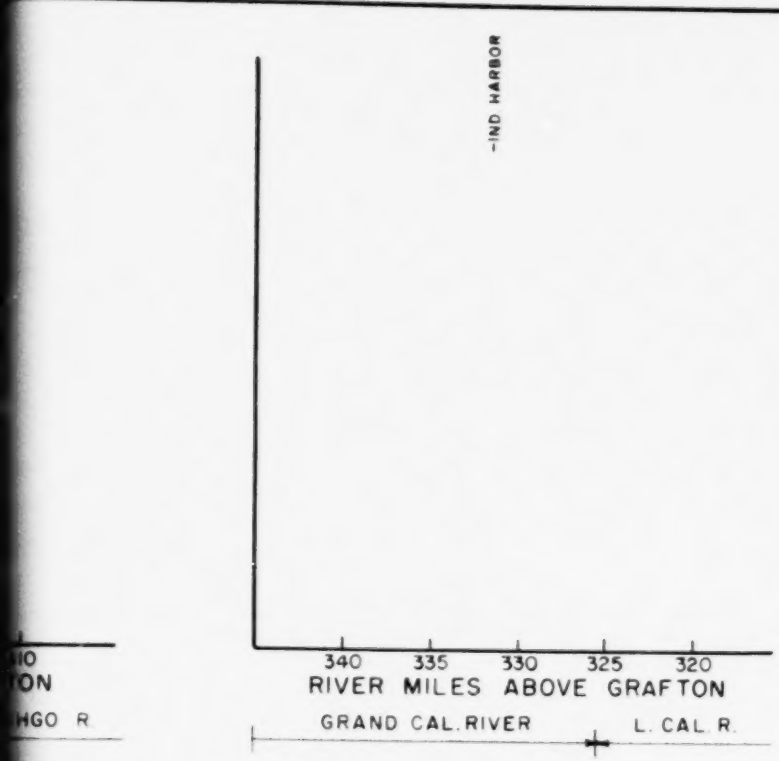
DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

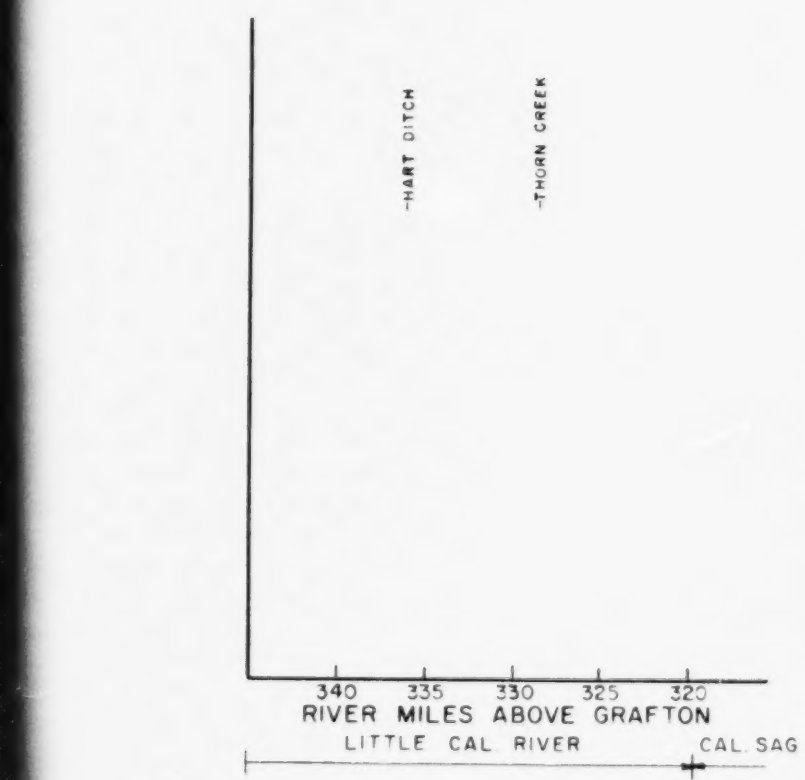
 FIGURE V-8


CAL HARBOR AT EWING
GRAND CAL R
CAL TREATMENT WORKS L CAL R
S & S CANAL
48.2
28.9
mg/l
15
10
5
335
330
325
320
315
310
305
300
RIVER MILES ABOVE GRAFTON
L MICH
CAL R
L CAL R
CAL. SAG CHANNEL
S & S CANAL
NAVY PIER & INLET
S BR. CHGO R.
mg/l
10
5
0
330
325
RIVER MILES
CHGO. R.
L. MICH.
WILMETTE INLET
N. SIDE TREATMENT WORKS
NO BRANCH CHGO R.
CHGO. R. INLET
STICKNEY TRM'T WORKS
CAL SAG CHANNEL
DES PLAINES R
mg/l
15
10
5
0
340
335
330
325
320
315
310
305
300
295
290
285
280
RIVER MILES ABOVE GRAFTON
L MICH.
N SHORE CH.
N. BR. CHGO R.
SO. BR.
SANITARY & SHIP CANAL
DES PLAINES


-S & S CANAL
NAVY PIER & INLET
-S BR CHGO R
-IND HARBOR
mg/l
10
5
0
330 325 320 315 310
RIVER MILES ABOVE GRAFTON
CHGO.
L. MICH. R.
SOUTH BRANCH CHGO R
305 300
S & S CANAL
340 335 330 325 320
RIVER MILES ABOVE GRAFTON
GRAND CAL. RIVER
L. CAL. R.


-CAL SAG CHANNEL
-DES PLAINES R
-KANKAKEE R.
-DRESDEN DAM
-HART DITCH
-THORN CREEK
310 305 300 295 290 285 280 275 270
MILES ABOVE GRAFTON
RY & SHIP CANAL
DES PLAINES R.
ILL. R
340 335 330 325 320
RIVER MILES ABOVE GRAFTON
LITTLE CAL. RIVER
CAL. SAG





LEGEND

APRIL–MAY ————

JUNE - - - - - - - -

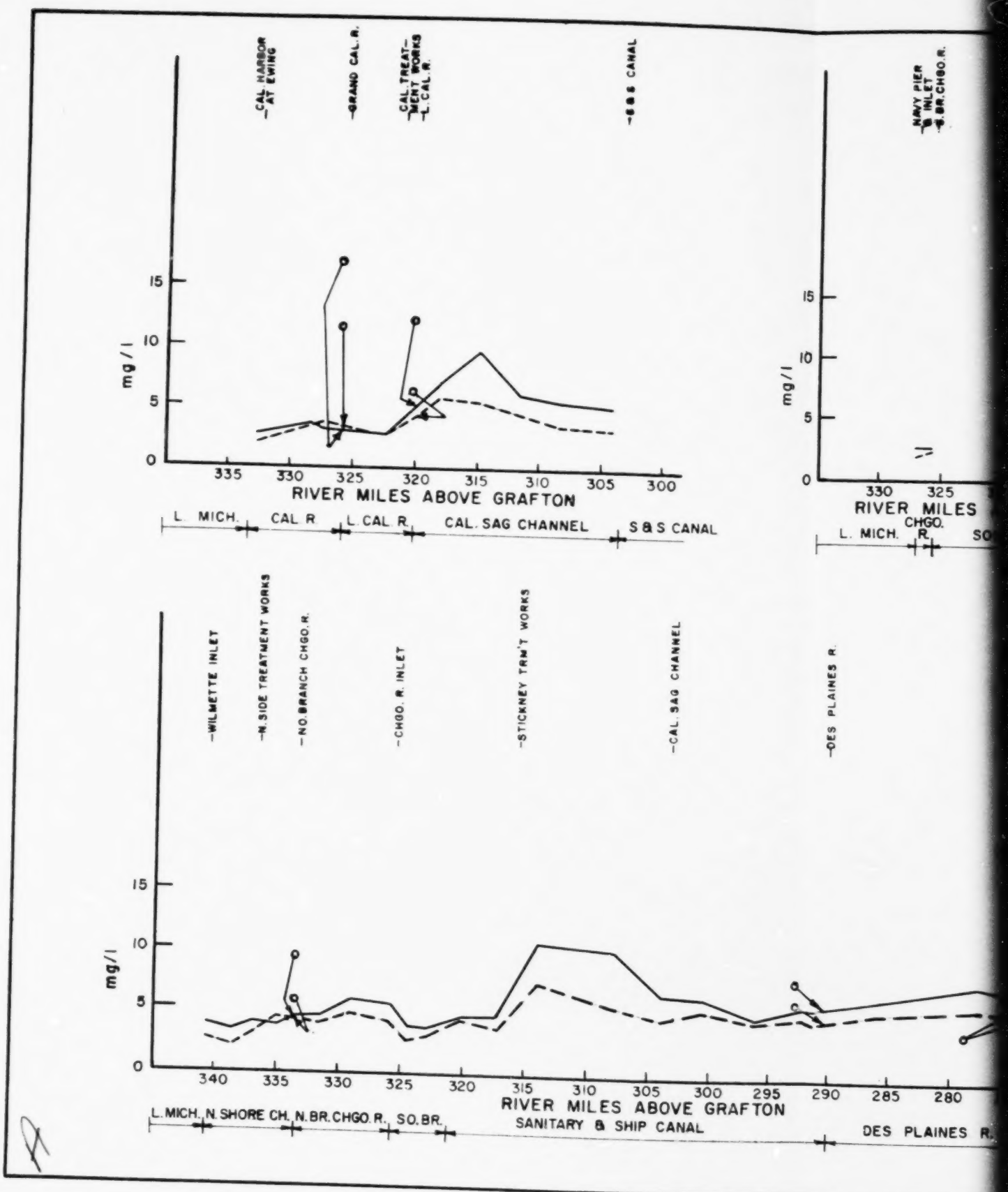
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

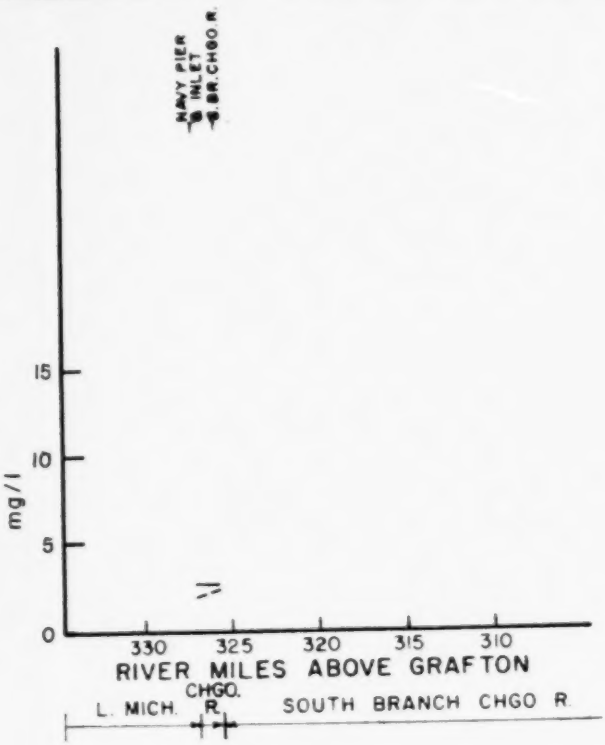
B. O. D. AVERAGES

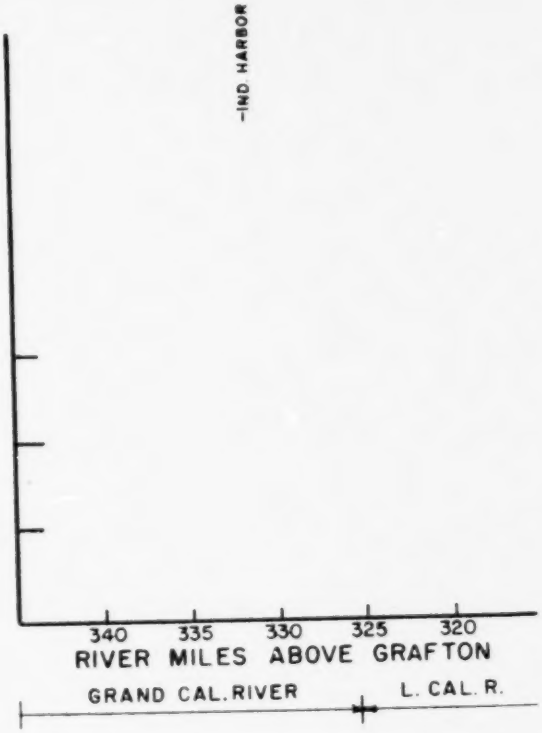
APRIL- MAY, & JUNE 1961
UPPER ILLINOIS RIVER BASIN

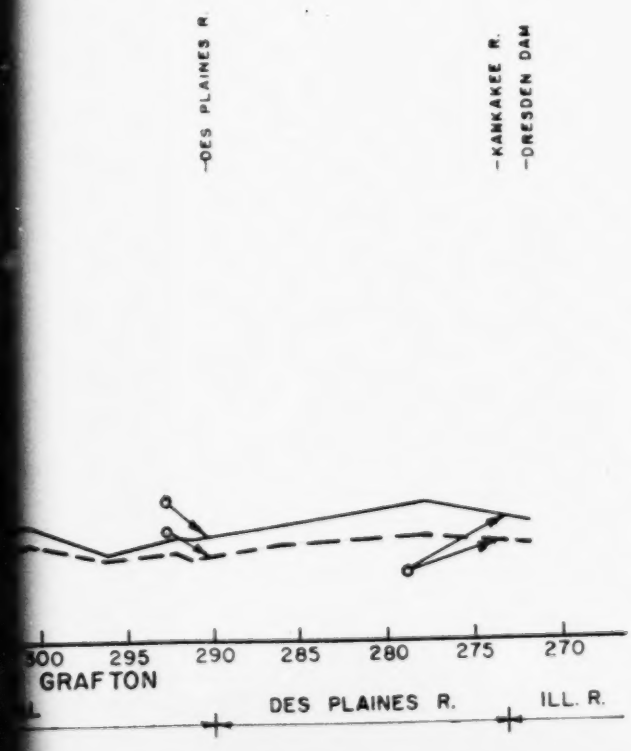
DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

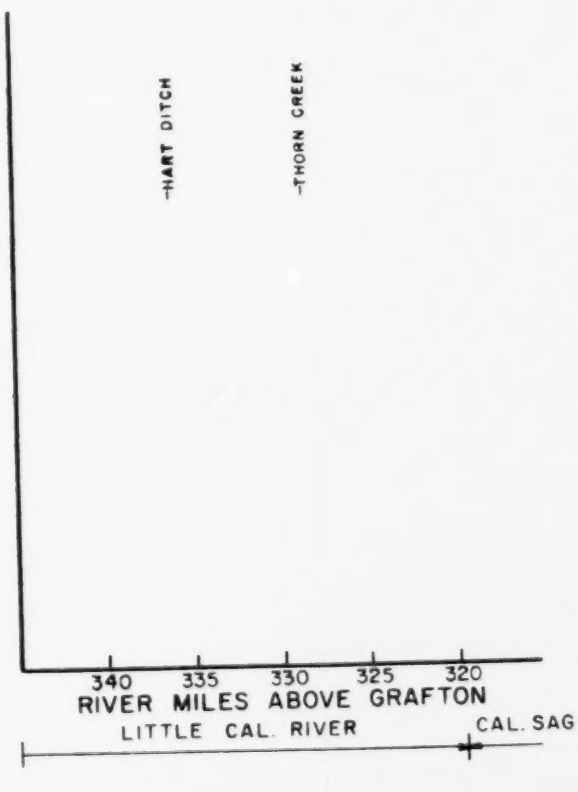
FIGURE V-9

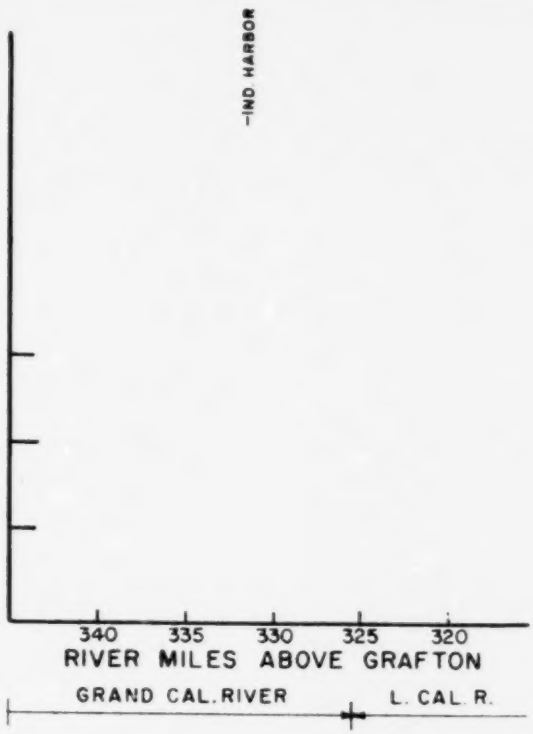

CAL. HARBOR AT EWING
GRAND CAL. R.
CAL. TREATMENT WORKS L. CAL. R.
S & S CANAL
mg/l
15
10
5
0
335 330 325 320 315 310 305 300
RIVER MILES ABOVE GRAFTON
L. MICH.
CAL R
L. CAL R.
CAL. SAG CHANNEL
S & S CANAL
NAVY PIER
INLET
S. BR. CHGO. R.
330 325
RIVER MILES
CHGO.
R.
L. MICH.
WILMETTE INLET
N. SIDE TREATMENT WORKS
NO. BRANCH CHGO. R.
CHGO. R. INLET
STICKNEY TRW'T WORKS
CAL. SAG CHANNEL
DES PLAINES R.
340 335 330 325 320 315 310 305 300 295 290 285 280
RIVER MILES ABOVE GRAFTON
L. MICH.
N. SHORE CH.
N. BR. CHGO. R.
SO. BR.
SANITARY & SHIP CANAL
DES PLAINES R.


NAVY PIER
INLET
SBR. CHGO R.
mg/l
15
10
5
0
330
325
320
315
310
RIVER MILES ABOVE GRAFTON
L. MICH.
CHGO. R.
SOUTH BRANCH CHGO R.


IND HARBOR
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
GRAND CAL. RIVER
L. CAL. R.


DES PLAINES R.
KANKAKEE R.
DRESDEN DAM
300
295
290
285
280
275
270
GRAFTON
DES PLAINES R.
ILL. R.

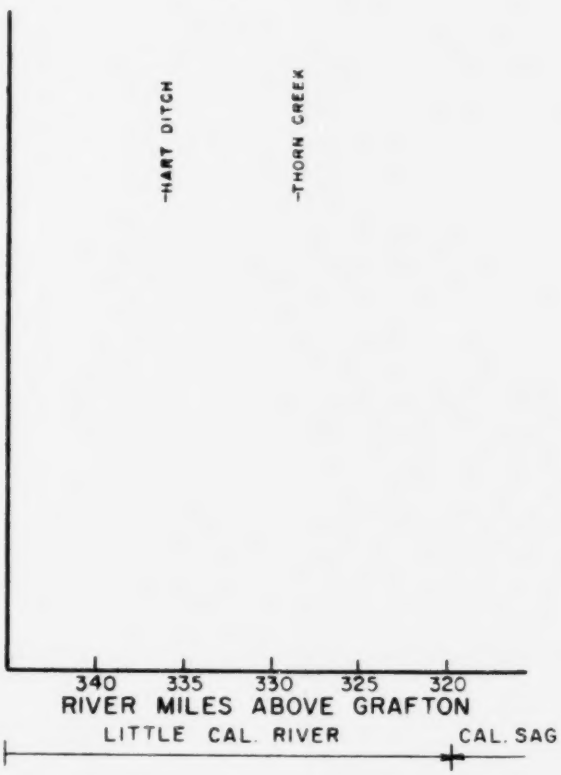

HART DITCH
THORN CREEK
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
LITTLE CAL. RIVER
CAL. SAG



LEGEND

JULY ———

AUGUST – – – –



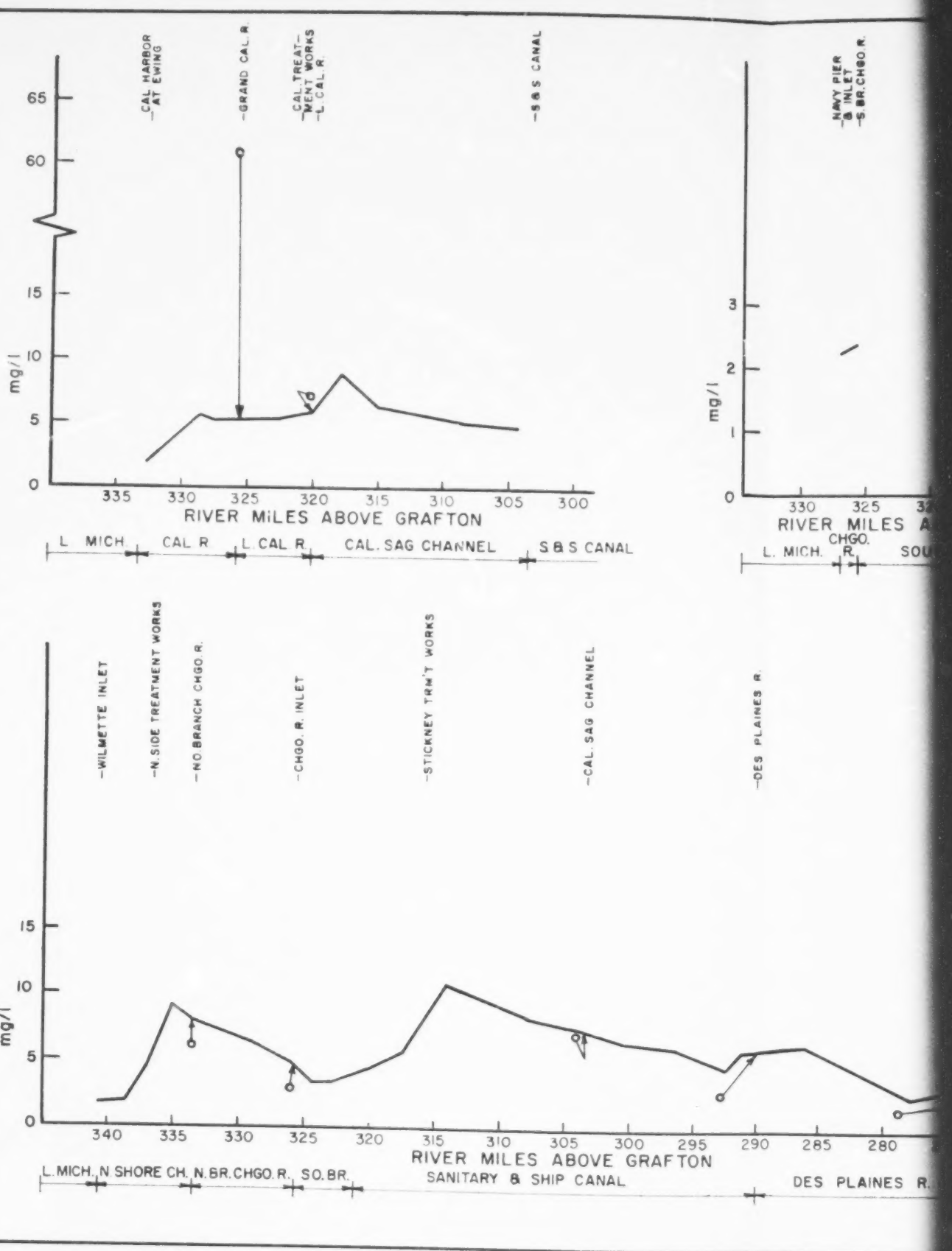
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

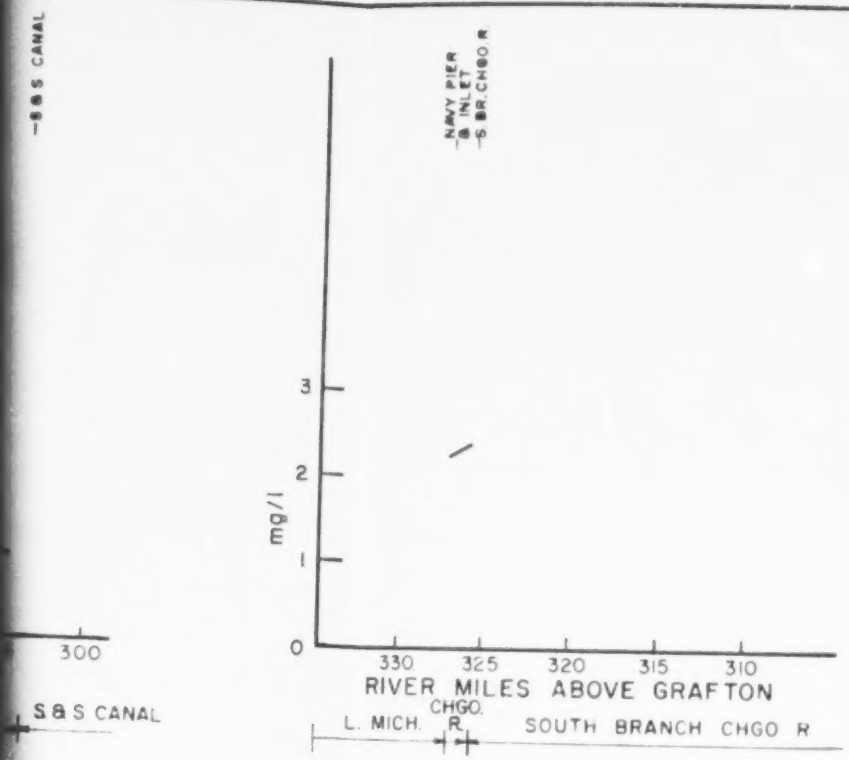
B.O.D. AVERAGES

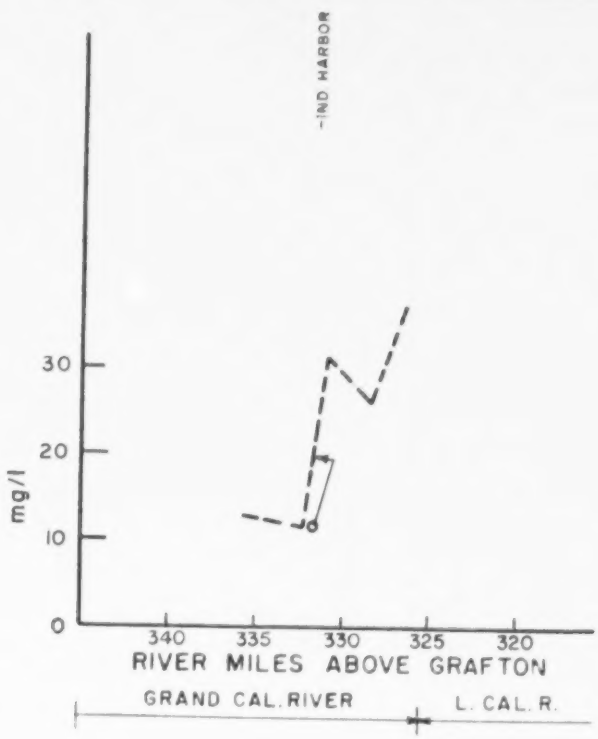
JULY & AUGUST 1961
UPPER ILLINOIS RIVER BASIN

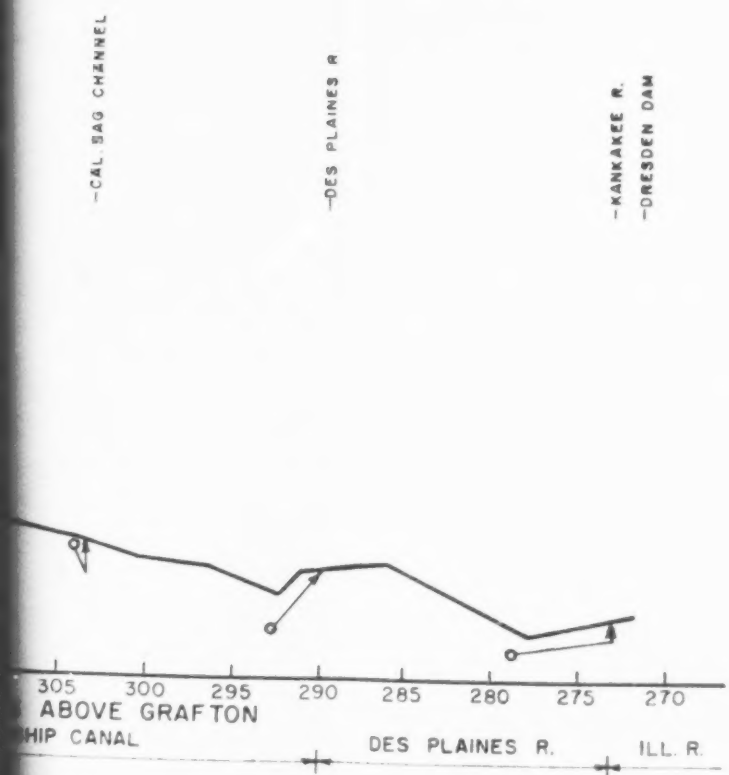
DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

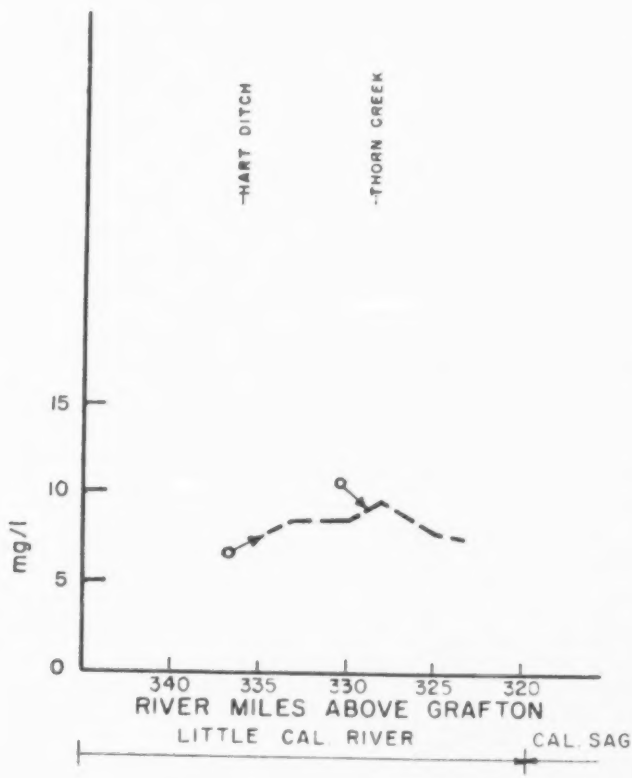
FIGURE V-10

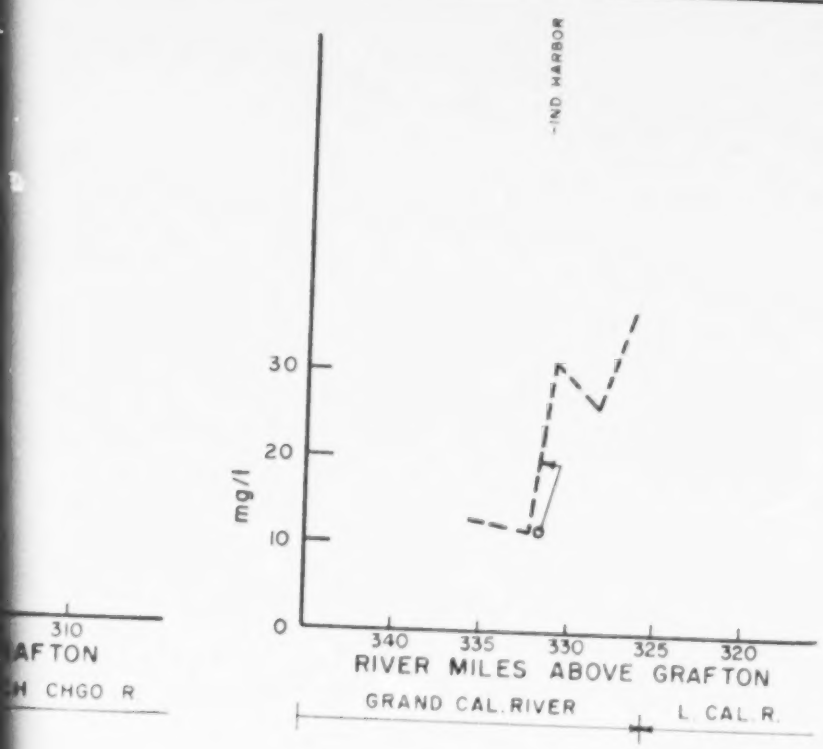

CAL HARBOR AT EWING
GRAND CAL. R.
CAL. TREAT-MENT WORKS L. CAL. R.
S. & S. CANAL
mg/l
65
60
15
10
5
0
335
330
325
320
315
310
305
300
RIVER MILES ABOVE GRAFTON
L. MICH.
CAL R.
L. CAL R.
CAL. SAG CHANNEL
S. & S. CANAL
NAVY PIER & INLET
S. BR. CHGO. R.
3
2
1
0
330
325
RIVER MILES A
CHGO. R.
L. MICH.
SOU
WILMETTE INLET
N. SIDE TREATMENT WORKS
NO. BRANCH CHGO. R.
CHGO. R. INLET
STICKNEY TRM'T WORKS
CAL. SAG CHANNEL
DES PLAINES R.
mg/l
15
10
5
0
340
335
330
325
320
315
310
305
300
295
290
285
280
RIVER MILES ABOVE GRAFTON
L. MICH.
N. SHORE CH.
N. BR. CHGO. R.
SO. BR.
SANITARY & SHIP CANAL
DES PLAINES R.


-S & S CANAL
-NAVY PIER
-S BR. CHGO R
mg/l
3
2
1
0
330
325
320
315
310
RIVER MILES ABOVE GRAFTON
300
S & S CANAL
L. MICH. CHGO. R.
SOUTH BRANCH CHGO R


-IND HARBOR
mg/l
30
20
10
0
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
GRAND CAL. RIVER
L. CAL. R.


-CAL. SAG CHANNEL
-DES PLAINES R
-KANKAKEE R.
-DRESDEN DAM
305
300
295
290
285
280
275
270
ABOVE GRAFTON
HIP CANAL
DES PLAINES R.
ILL. R.

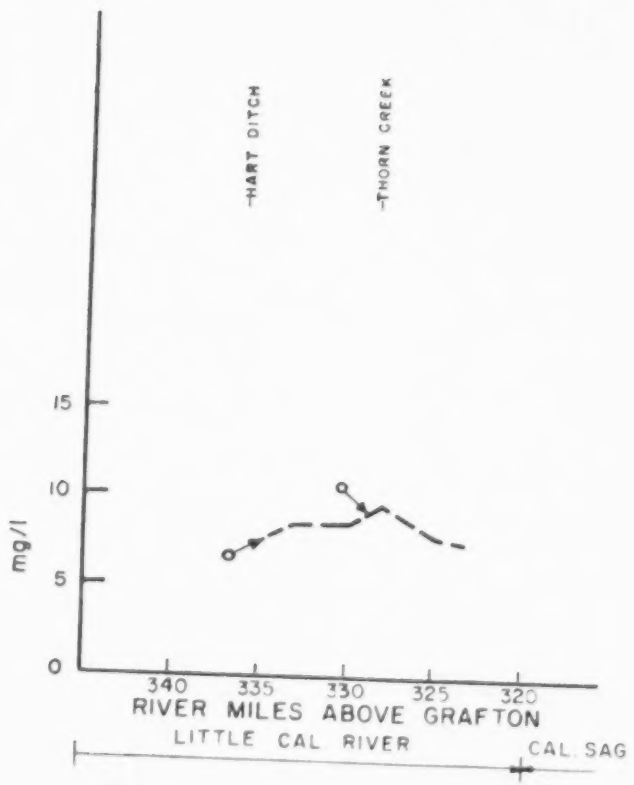

-HART DITCH
-THORN CREEK
mg/l
15
10
5
0
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
LITTLE CAL. RIVER
CAL. SAG



LEGEND

JAN. ——————

FEB. - - - - -



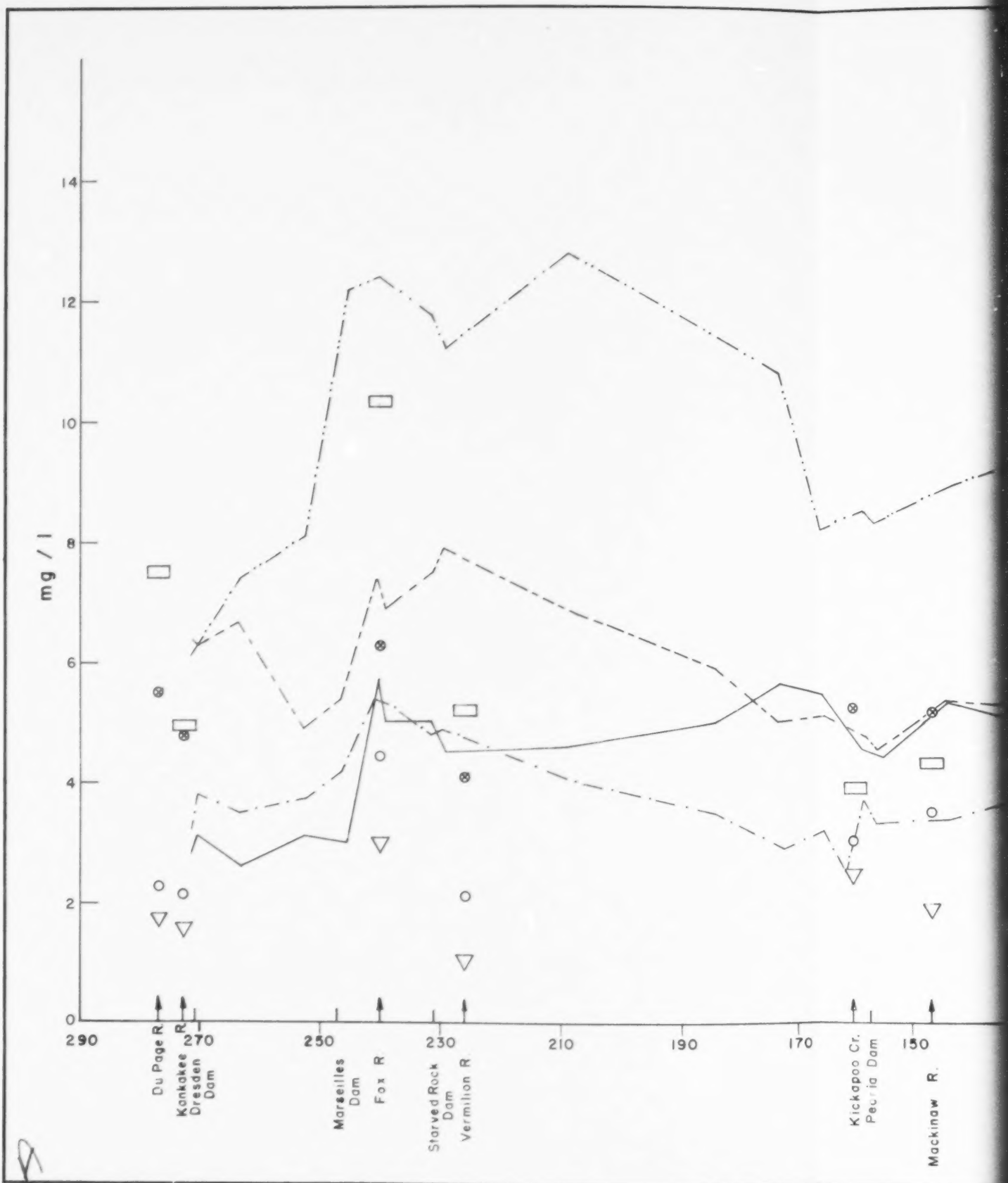
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

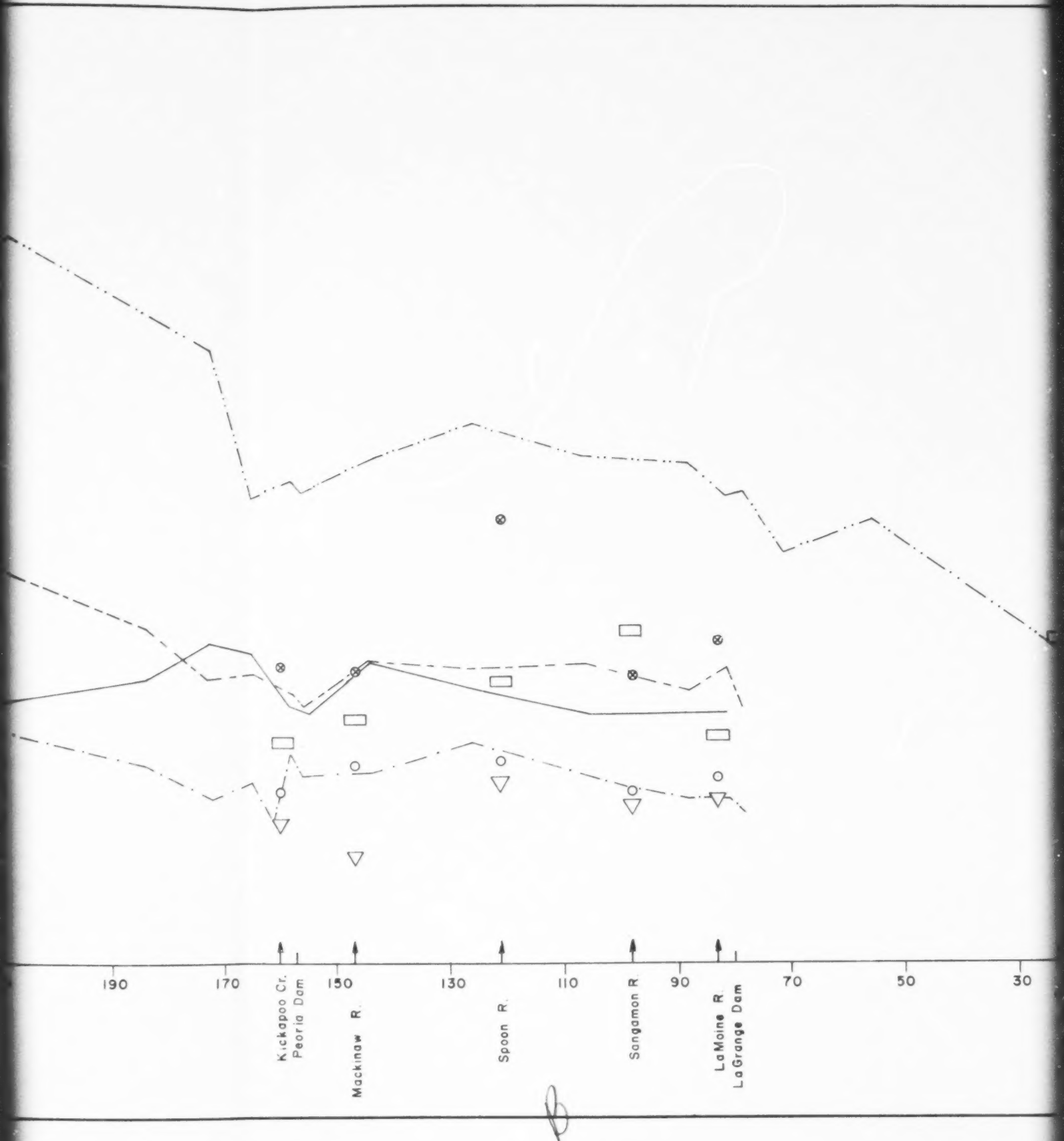
B. O. D. AVERAGES

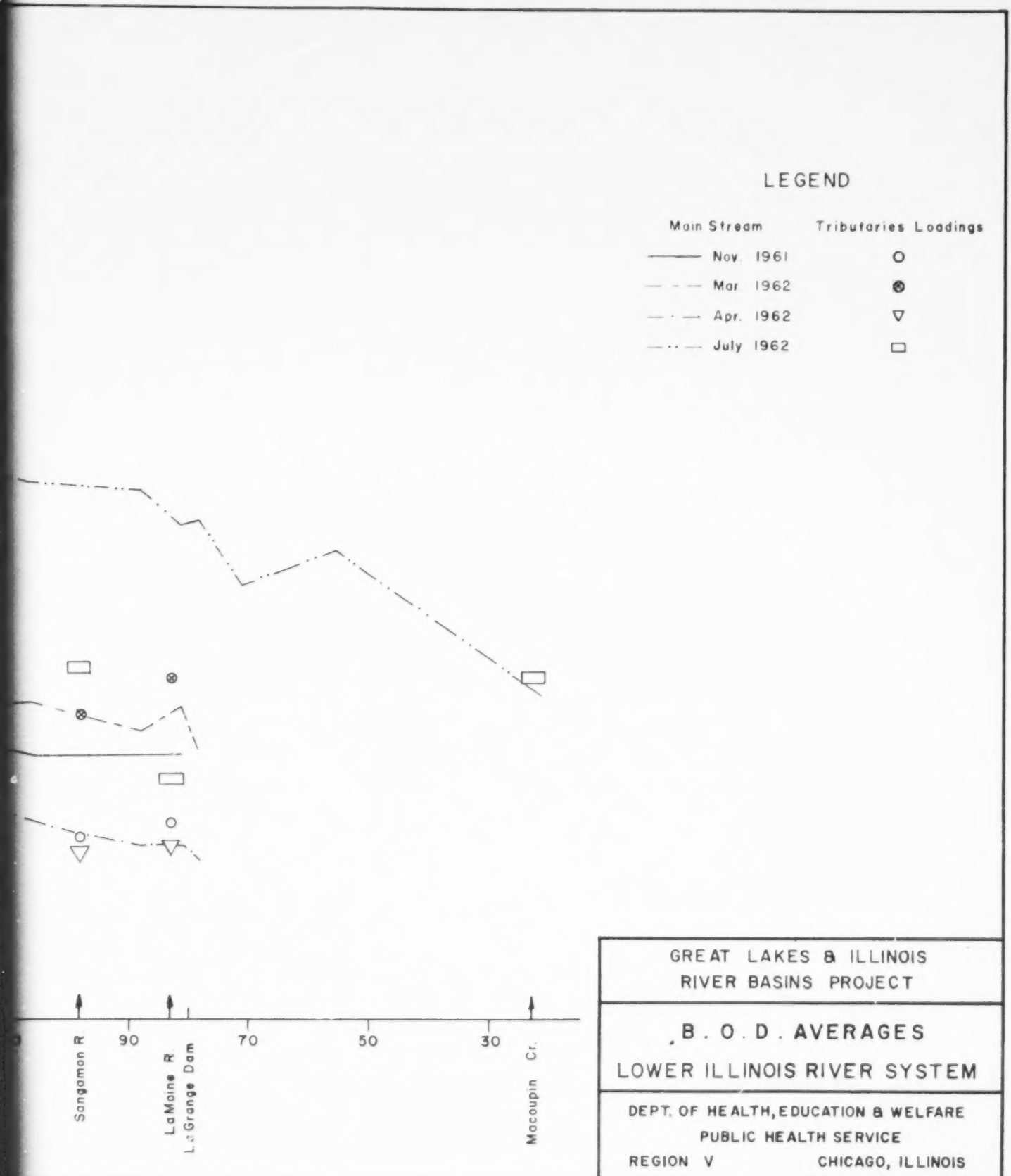
JAN. & FEB 1962
UPPER ILLINOIS RIVER BASIN

DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE V-11


mg / l
0
2
4
6
8
10
12
14
290
270
250
230
210
190
170
150
Du Page R.
Kankakee R.
Dresden Dam
Marseilles Dam
Fox R.
Starved Rock Dam
Vermilion R.
Kickapoo Cr.
Peoria Dam
Mackinaw R.


190
170
150
130
110
90
70
50
30
Kickapoo Cr.
Peoria Dam
Mackinaw R.
Spoon R.
Sangamon R.
LaMoine R.
LaGrange Dam



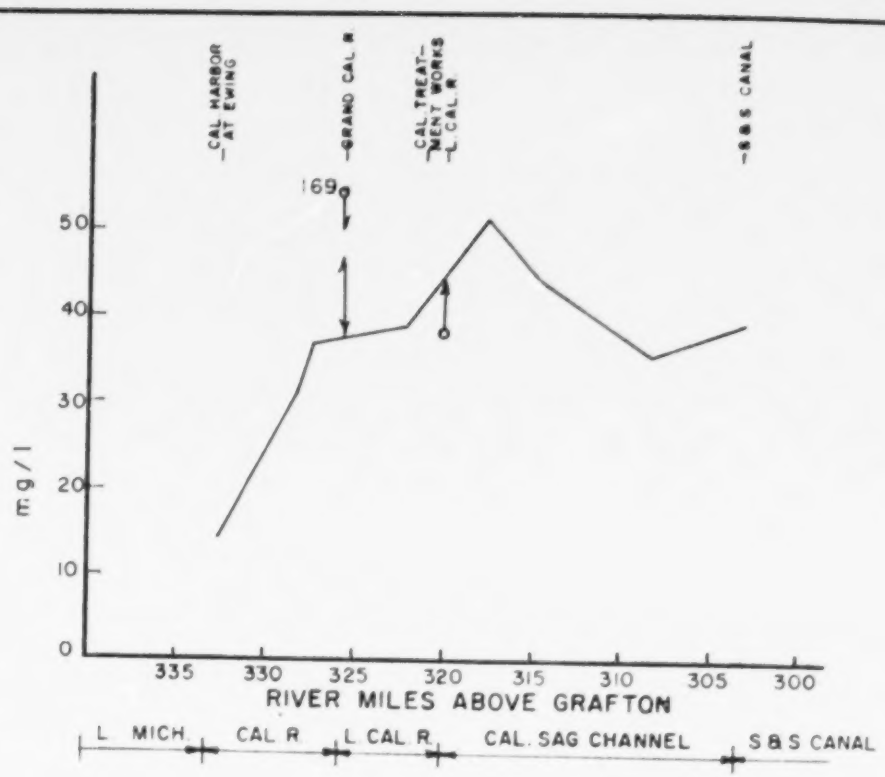
GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

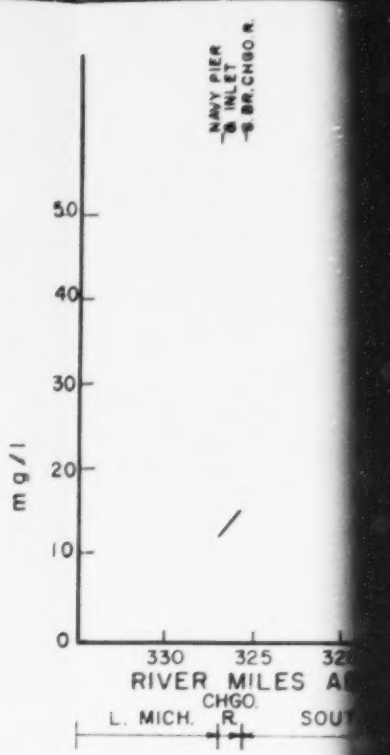
B. O. D. AVERAGES

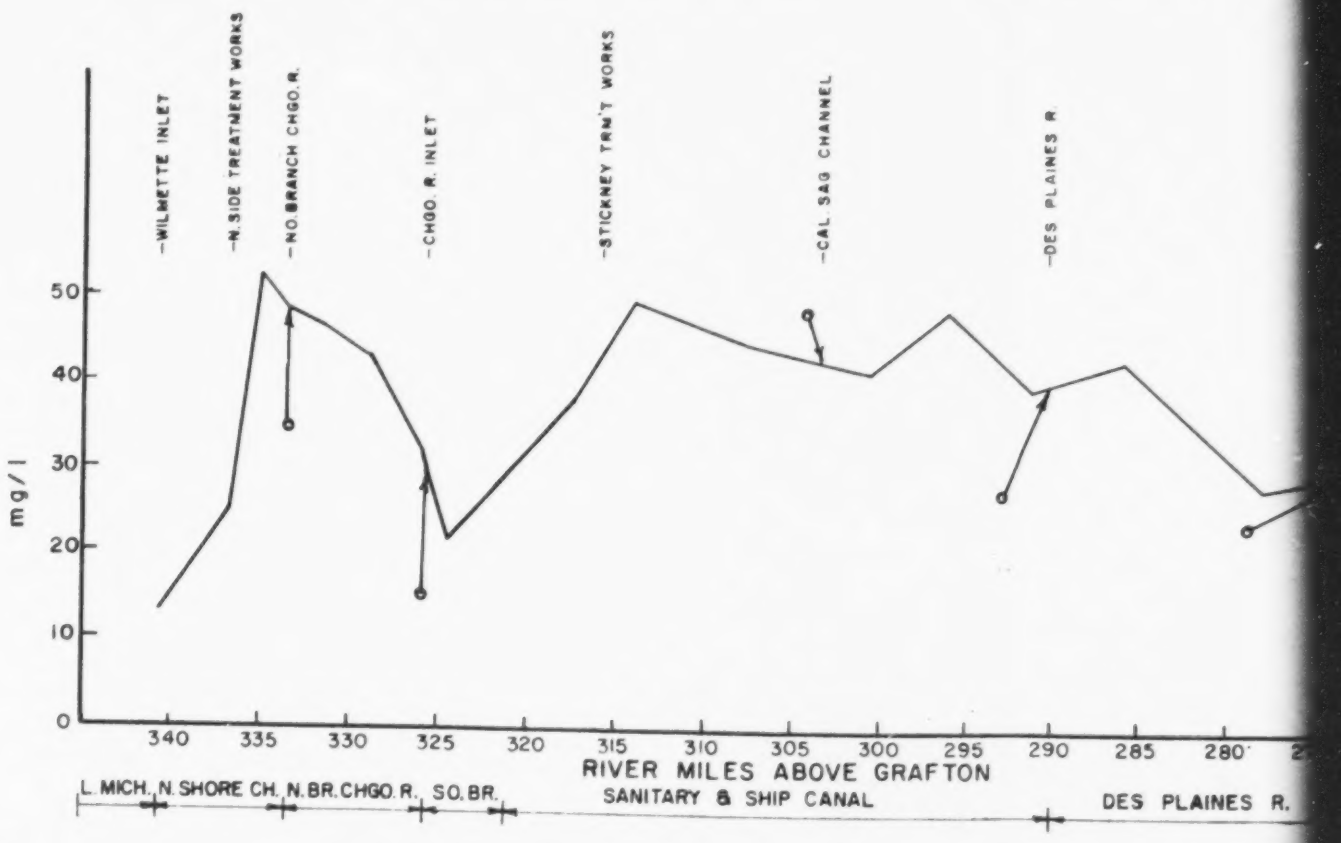
LOWER ILLINOIS RIVER SYSTEM

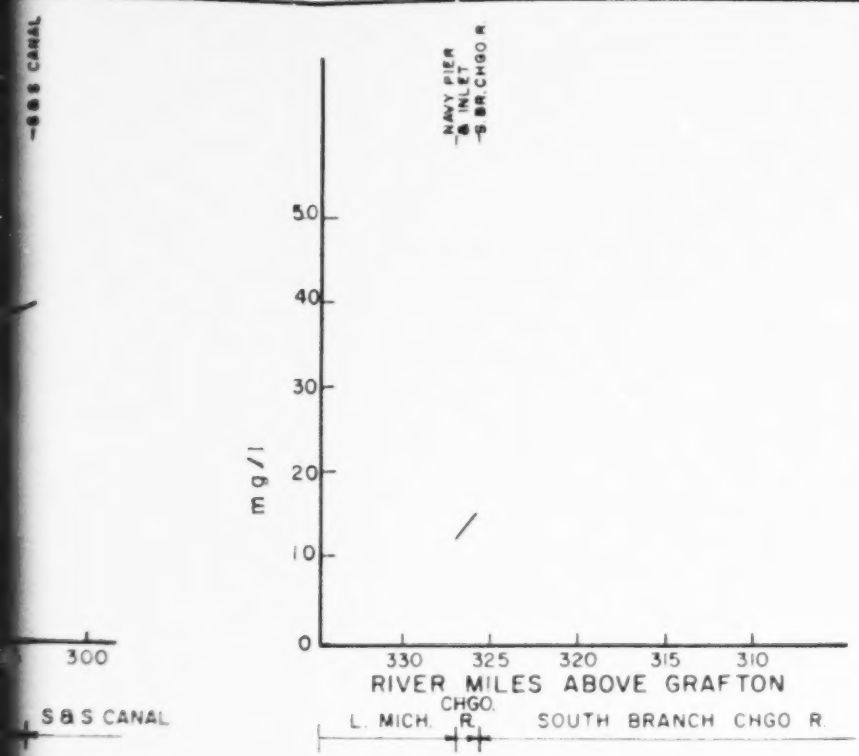
DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

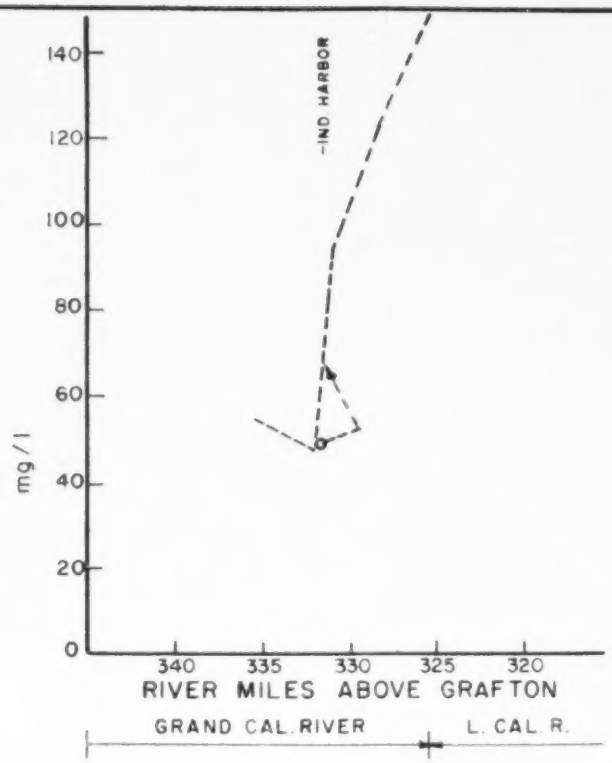
FIGURE V-12

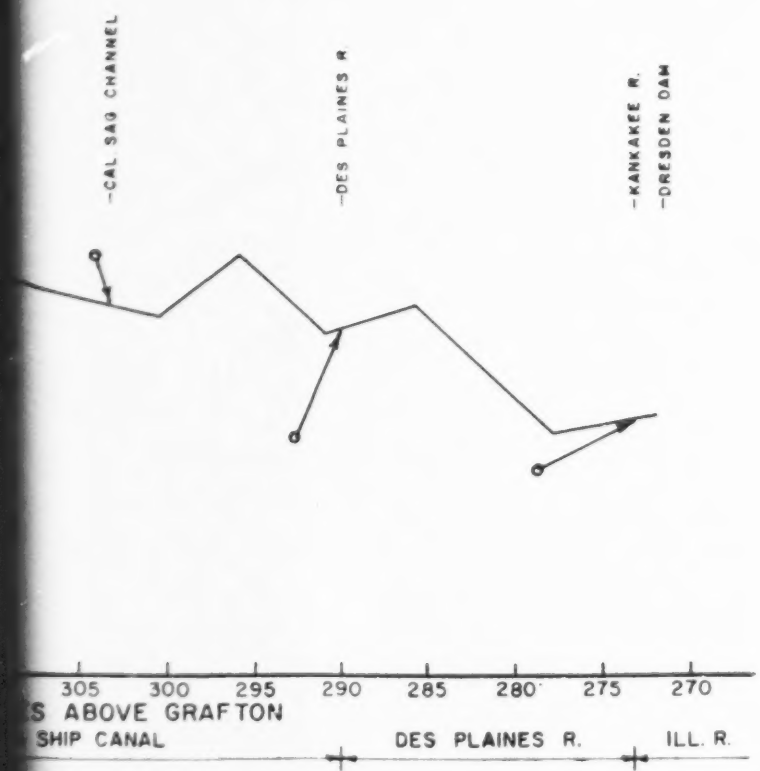

CAL HARBOR AT EWING
GRAND CAL R
CAL TREATMENT WORKS L CAL R
S & S CANAL
169
mg/l
0
10
20
30
40
50
335
330
325
320
315
310
305
300
RIVER MILES ABOVE GRAFTON
L MICH.
CAL R
L CAL R
CAL SAG CHANNEL
S & S CANAL

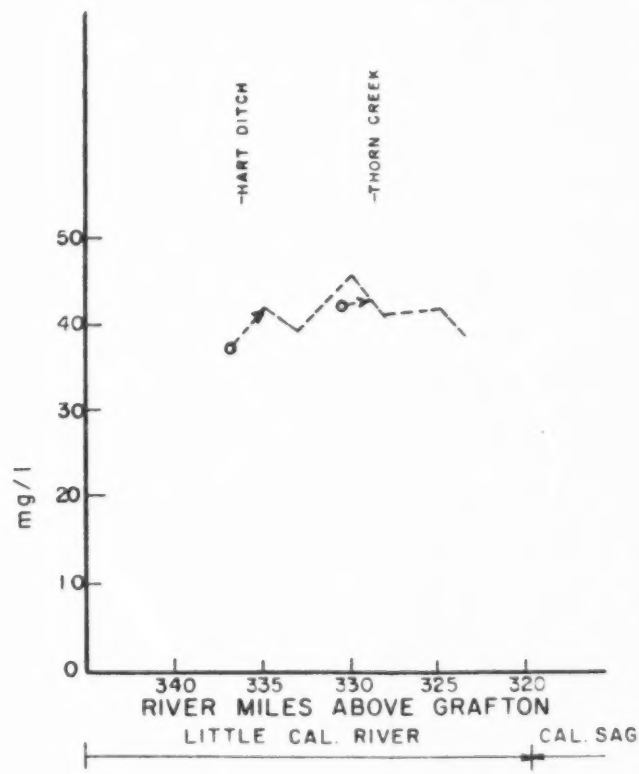

NAVY PIER
INLET
BR. CHGO R.
mg/l
0
10
20
30
40
50
330
325
RIVER MILES
CHGO. R.
L. MICH.

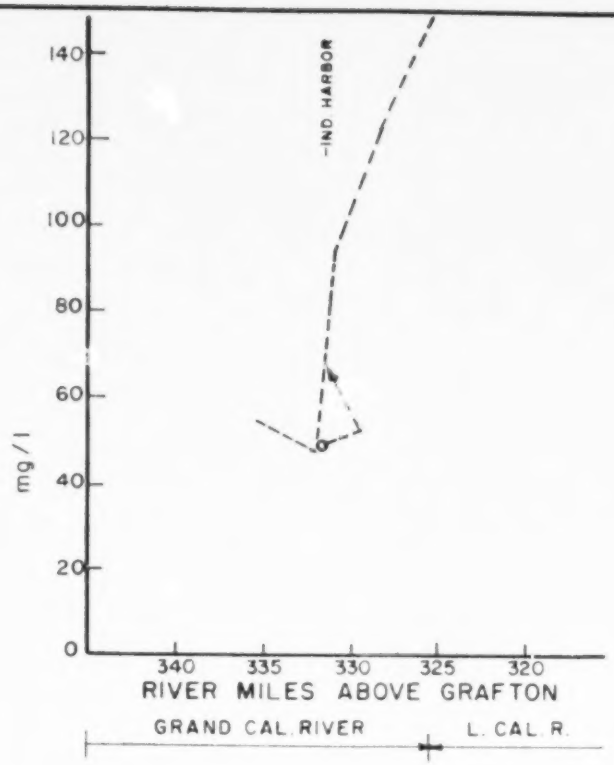

WILMETTE INLET
N. SIDE TREATMENT WORKS
NO. BRANCH CHGO. R.
CHGO. R. INLET
STICKNEY TRN'T WORKS
CAL SAG CHANNEL
DES PLAINES R.
mg/l
0
10
20
30
40
50
340
335
330
325
320
315
310
305
300
295
290
285
280
RIVER MILES ABOVE GRAFTON
L. MICH.
N. SHORE CH.
N. BR. CHGO. R.
SO. BR.
SANITARY & SHIP CANAL
DES PLAINES R.


-S & S CANAL
-NAVY PIER
-S INLET
-S BR. CHGO R
50
40
30
20
10
0
mg/l
300
330
325
320
315
310
RIVER MILES ABOVE GRAFTON
S & S CANAL
CHGO.
L. MICH. R.
SOUTH BRANCH CHGO R.


-IND HARBOR
140
120
100
80
60
40
20
0
mg/l
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
GRAND CAL. RIVER
L. CAL. R.


-CAL SAG CHANNEL
-DES PLAINES R
-KANKAKEE R.
-DRESDEN DAM
305
300
295
290
285
280
275
270
S ABOVE GRAFTON
SHIP CANAL
DES PLAINES R.
ILL. R.

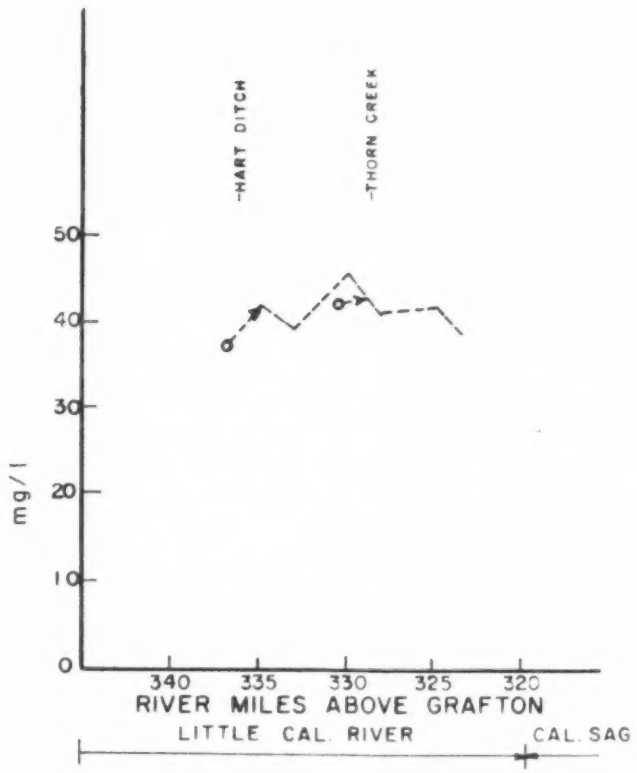

-HART DITCH
-THORN CREEK
50
40
30
20
10
0
mg/l
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
LITTLE CAL. RIVER
CAL. SAG



LEGEND

JAN. ———

FEB. - - - - - - - -

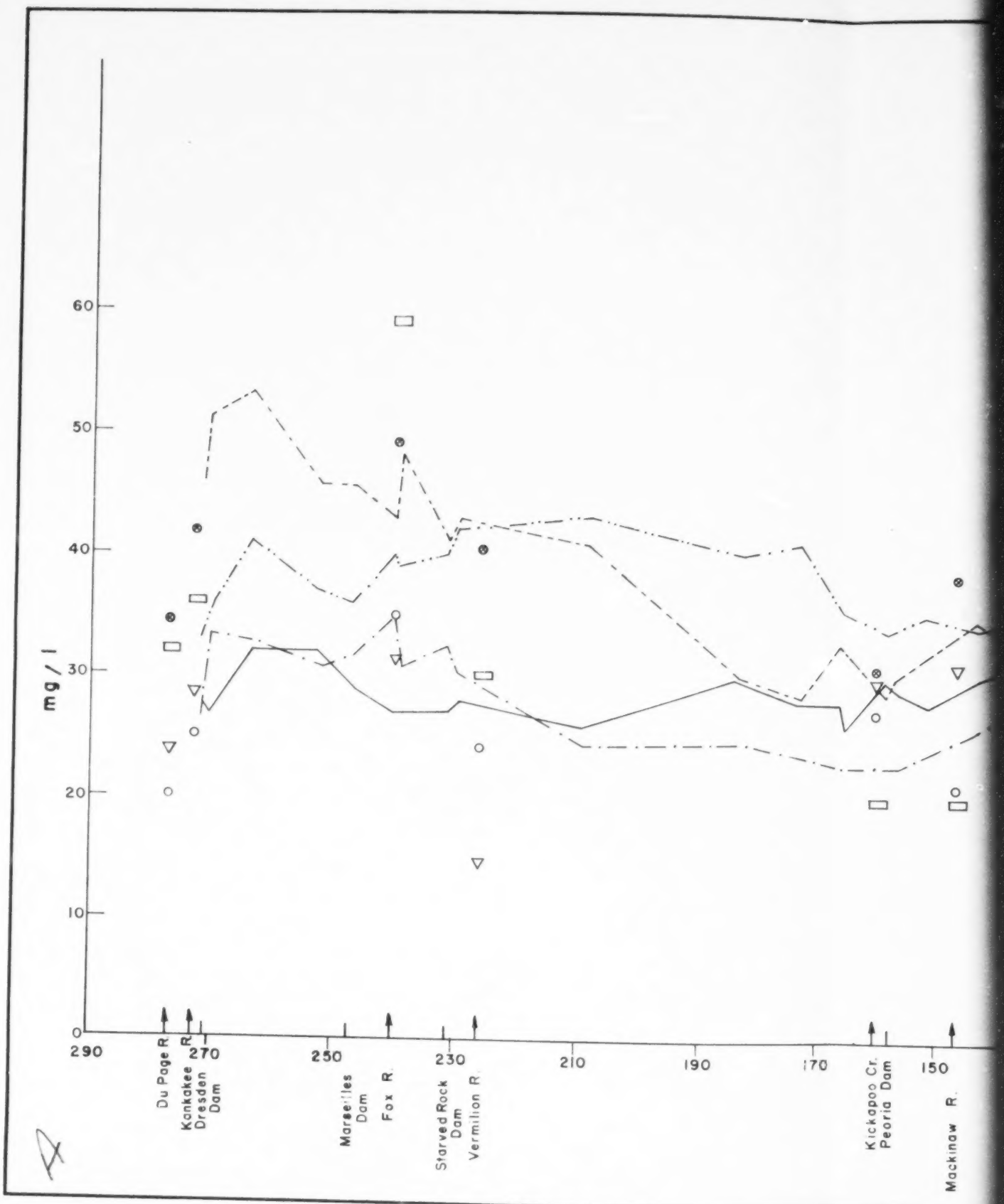


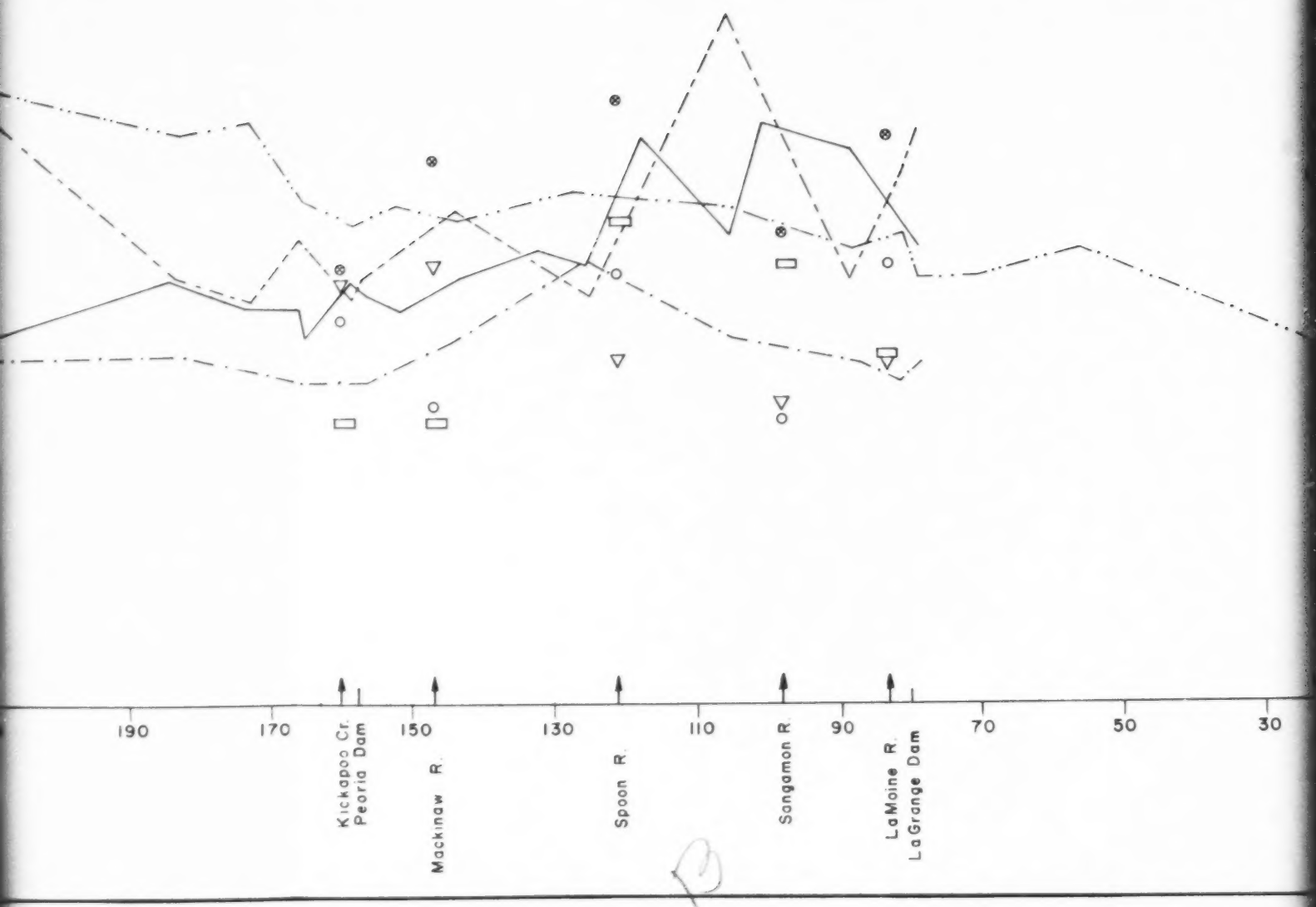
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

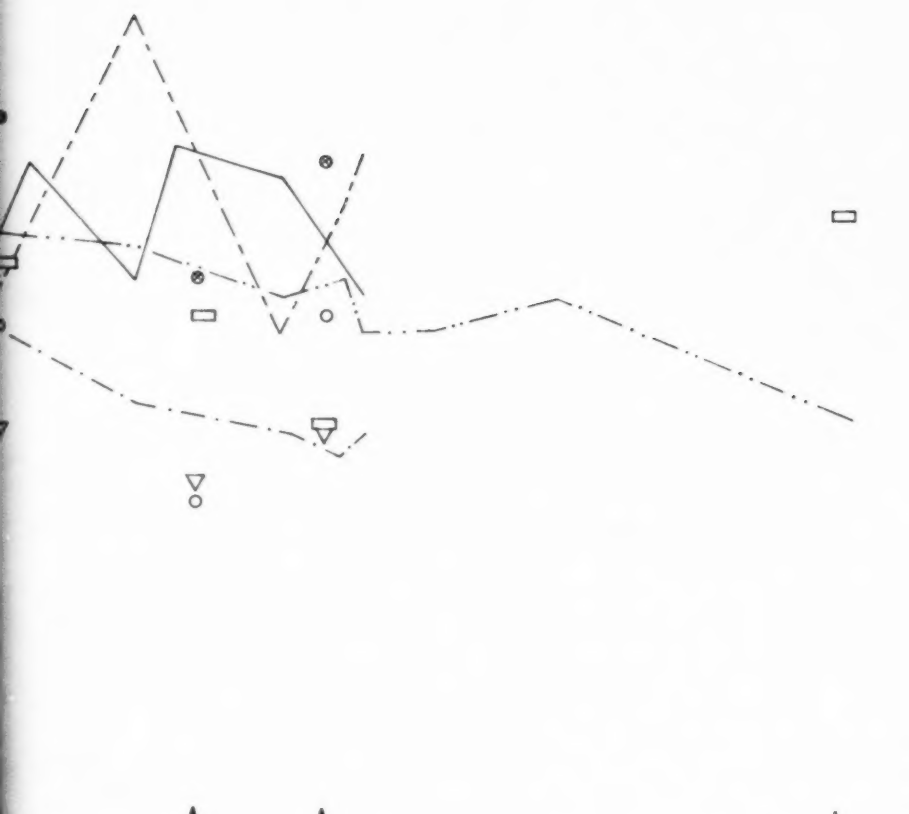
C. O. D. AVERAGES
JAN. & FEB. 1962
UPPER ILLINOIS RIVER SYSTEM

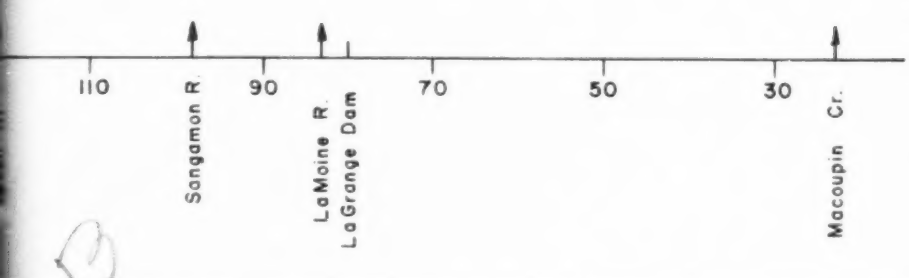
DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE V-13


mg/l
60
50
40
30
20
10
0
290
270
250
230
210
190
170
150
Du Page R.
Kankakee R.
Dresden Dam
Marseilles Dam
Fox R.
Starved Rock Dam
Vermilion R.
Kickapoo Cr.
Peoria Dam
Mackinaw R.


190
170
150
130
110
90
70
50
30
Kickapoo Cr.
Peoria Dam
Mackinaw R.
Spoon R.
Sangamon R.
LaMoine R.
LaGrange Dam





GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

C.O.D. AVERAGES

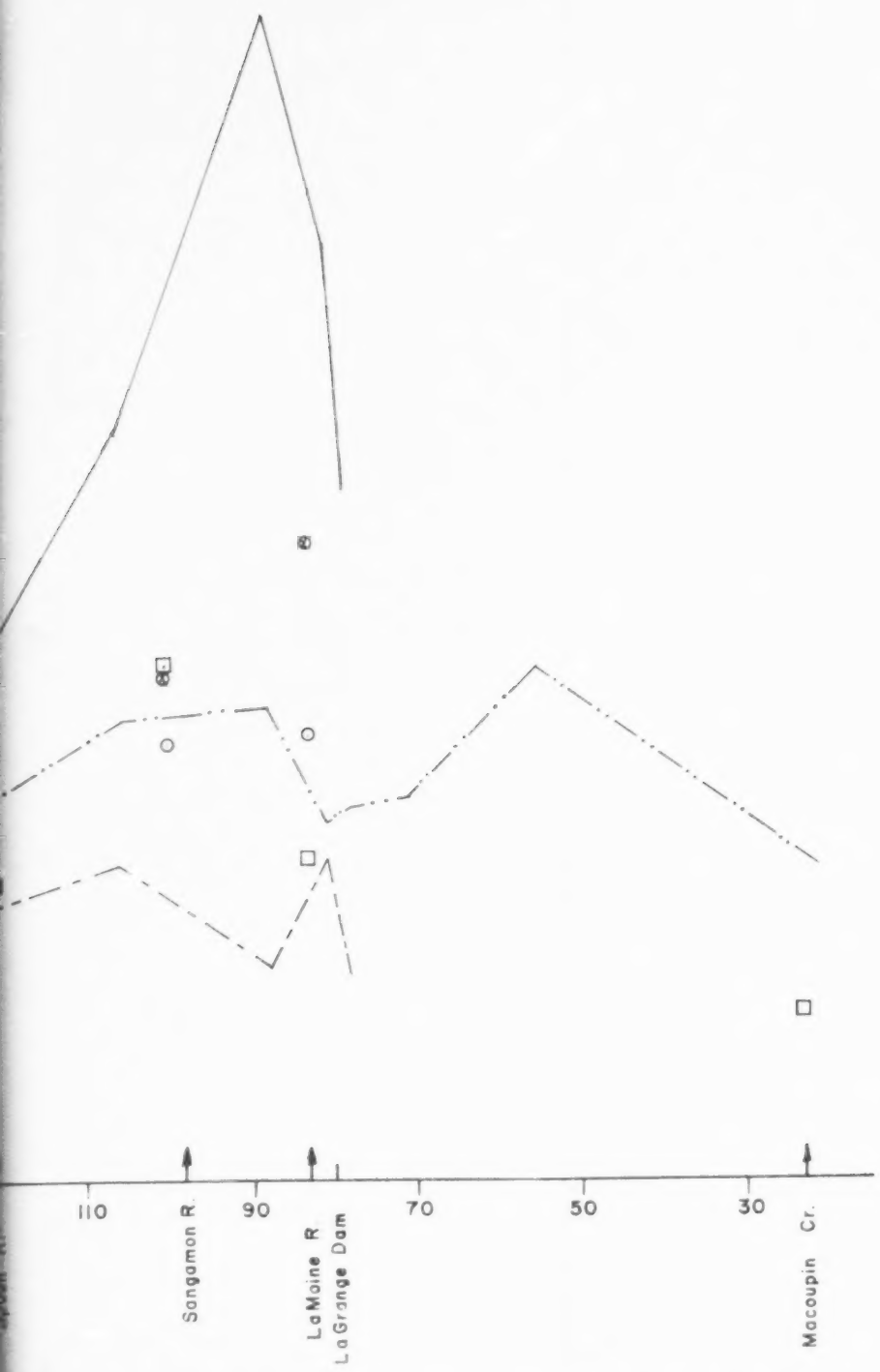
LOWER ILLINOIS RIVER SYSTEM

DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE V-14

mg/l
420
360
300
240
180
120
60
0
290
270
250
230
210
190
170
150
Du Page R.
Kankakee R.
Dresden Dam
Marseilles Dam
Fox R.
Starved Rock Dam
Vermilion R.
Kickapoo Cr.
Peoria Dam
Mackinaw R.

190
170
150
130
110
90
70
50
30
Kickapoo Cr.
Peoria Dam
Mackinaw R.
Spoon R.
Sangamon R.
LaMoine R.
LaGrange Dam
Macoupin Cr.



LEGEND

Main Stream	Tributaries Loadings
Nov. 1961	○
Mar. 1962	⊗
July 1962	□

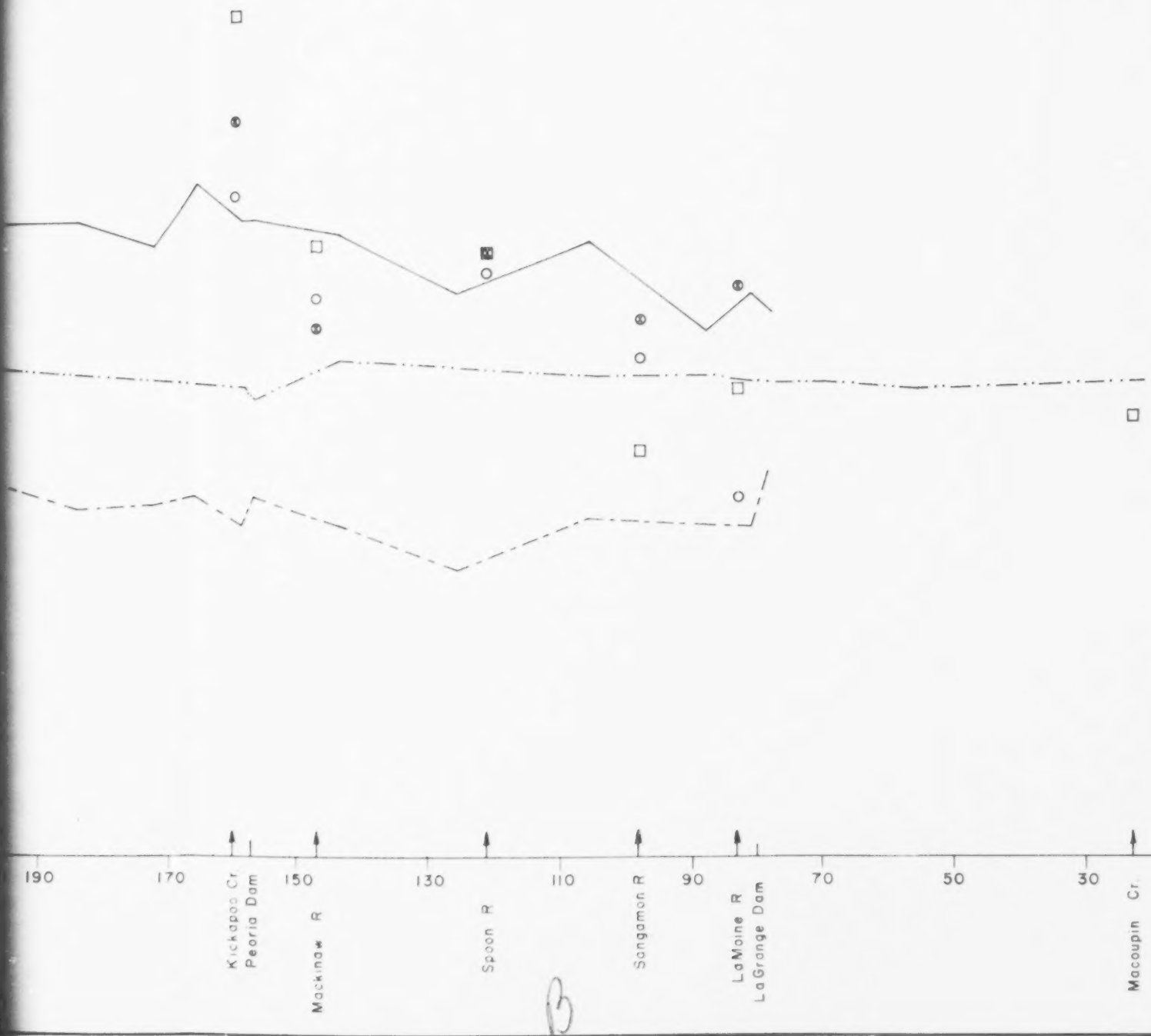
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

SUSPENDED SOLIDS
LOWER ILLINOIS RIVER SYSTEM

DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE V-15

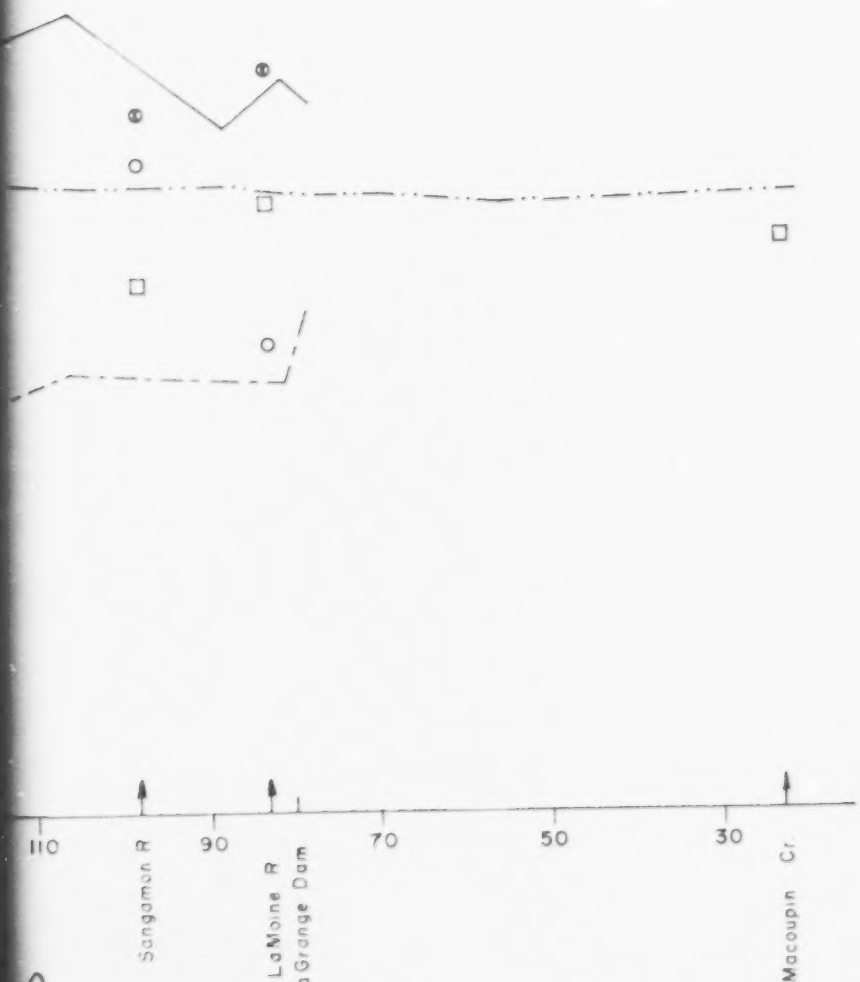
700
600
500
400
300
200
100
0
mg/l
290
270
250
230
210
190
170
150
Du Page R
Kankakee R
Dresden Dam
Marseilles Dam
Fox R
Starved Rock Dam
Vermilion R
Kickapoo Cr.
Peoria Dam
Mackinaw R.


190
170
150
130
110
90
70
50
30
Kickapoo Cr
Peoria Dam
Mackinaw R
Spoon R
Sangamon R
LaMoine R
LaGrange Dam
Macoupin Cr.

B

LEGEND

Main Stream	Tributaries Loadings
Nov. 1961	○
Mar. 1962	⊗
July 1962	□

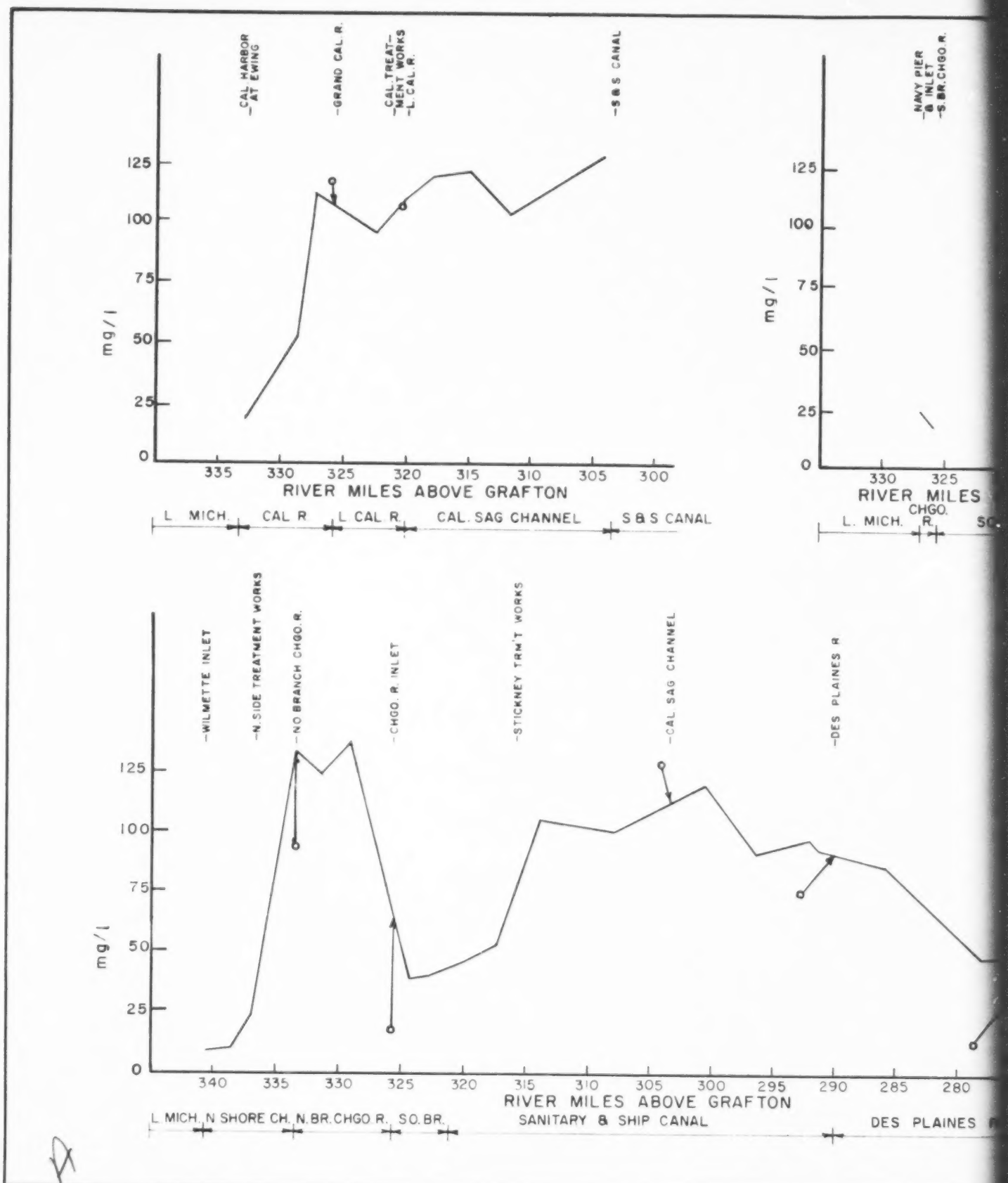


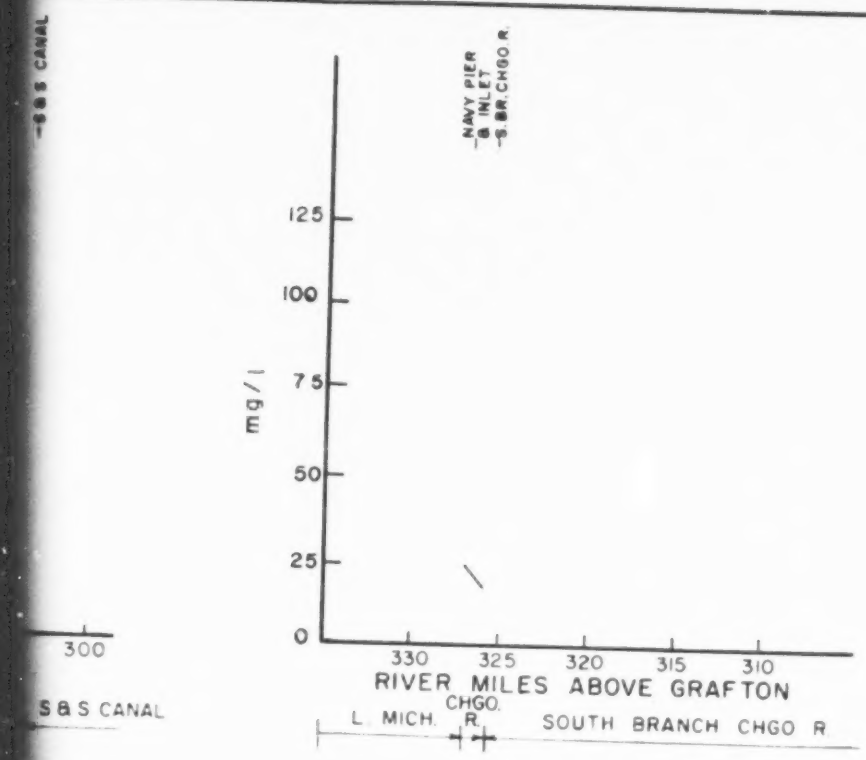
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

DISSOLVED SOLIDS
LOWER ILLINOIS RIVER SYSTEM

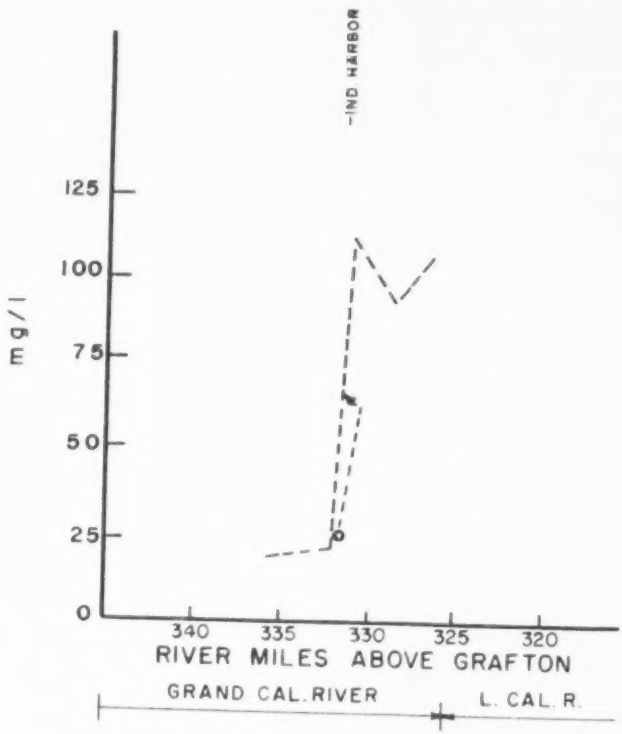
DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

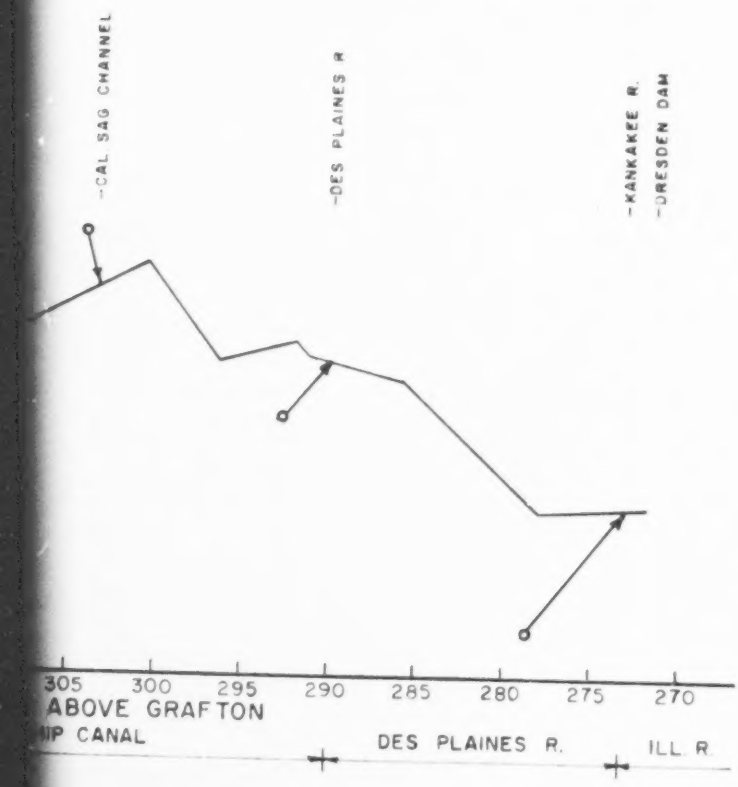
FIGURE V-16

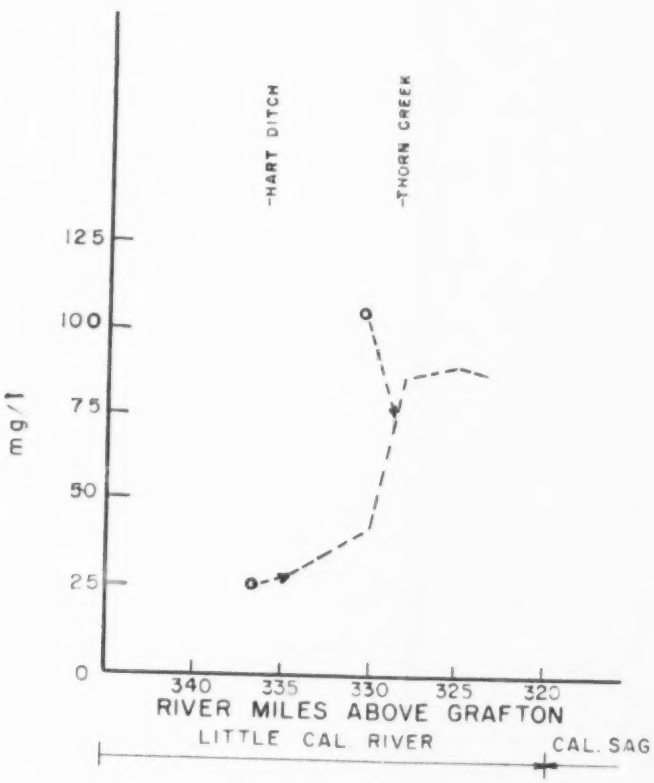

-CAL HARBOR AT EWING
-GRAND CAL. R.
-CAL. TREAT-MENT WORKS -L. CAL. R.
-S & S CANAL
mg/l
125
100
75
50
25
0
335 330 325 320 315 310 305 300
RIVER MILES ABOVE GRAFTON
L. MICH.
CAL R
L CAL R.
CAL. SAG CHANNEL
S & S CANAL
-NAVY PIER -& INLET -S. BR. CHGO. R.
330 325
RIVER MILES
CHGO.
L. MICH. R.
SC
-WILMETTE INLET
-N. SIDE TREATMENT WORKS
-NO BRANCH CHGO. R.
-CHGO. R. INLET
-STICKNEY TRM'T WORKS
-CAL SAG CHANNEL
-DES PLAINES R
340 335 330 325 320 315 310 305 300 295 290 285 280
RIVER MILES ABOVE GRAFTON
L MICH. N SHORE CH. N. BR. CHGO R. SO. BR.
SANITARY & SHIP CANAL
DES PLAINES

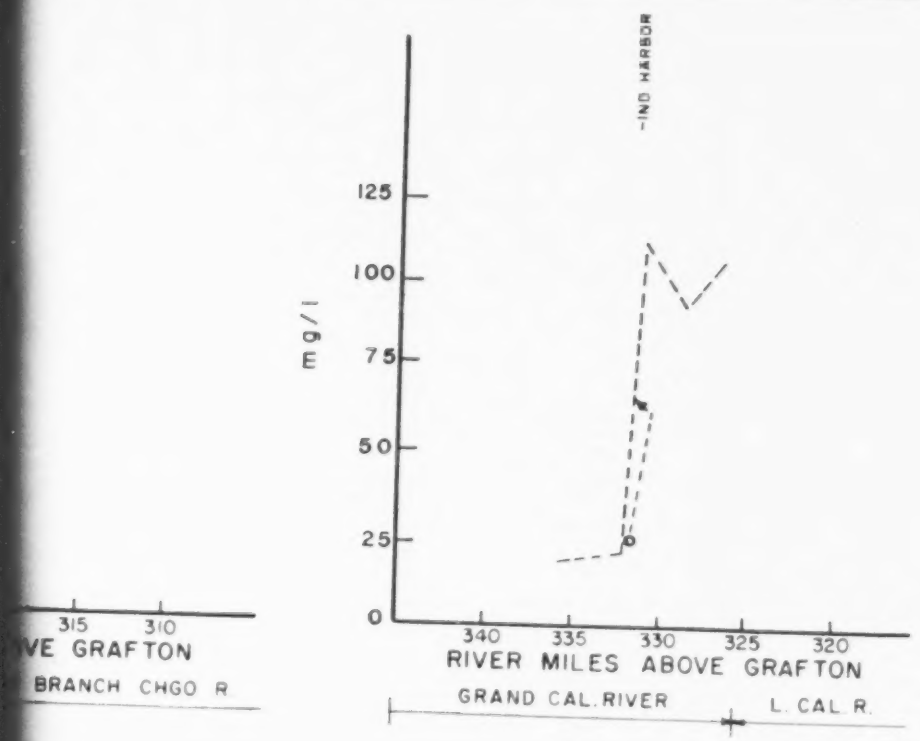

-S & S CANAL
NAVY PIER
-S. BR. CHGO. R.
125
100
75
50
25
0
mg/l
330
325
320
315
310
RIVER MILES ABOVE GRAFTON
CHGO.
L. MICH. R.
SOUTH BRANCH CHGO R

300
S & S CANAL


-IND HARBOR
125
100
75
50
25
0
mg/l
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
GRAND CAL. RIVER
L. CAL. R.


-CAL SAG CHANNEL
-DES PLAINES R
-KANKAKEE R.
-DRESDEN DAM
305
300
295
290
285
280
275
270
ABOVE GRAFTON
IP CANAL
DES PLAINES R.
ILL R

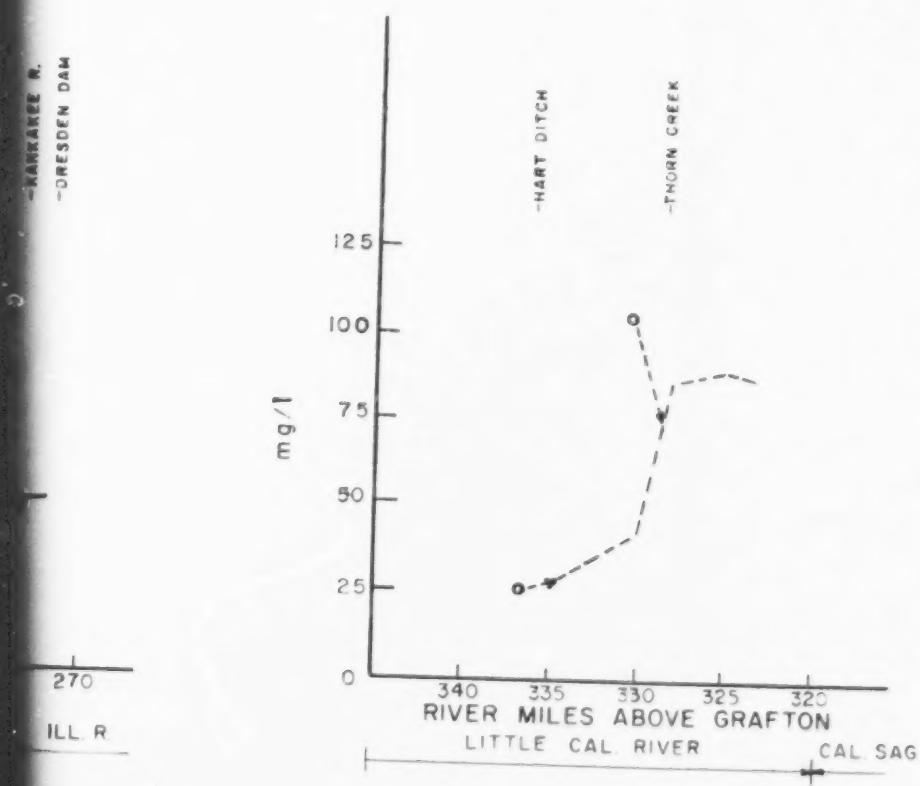

-HART DITCH
-THORN CREEK
125
100
75
50
25
0
mg/l
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
LITTLE CAL. RIVER
CAL. SAG



LEGEND

JAN. ———

FEB. - - - - - - - -

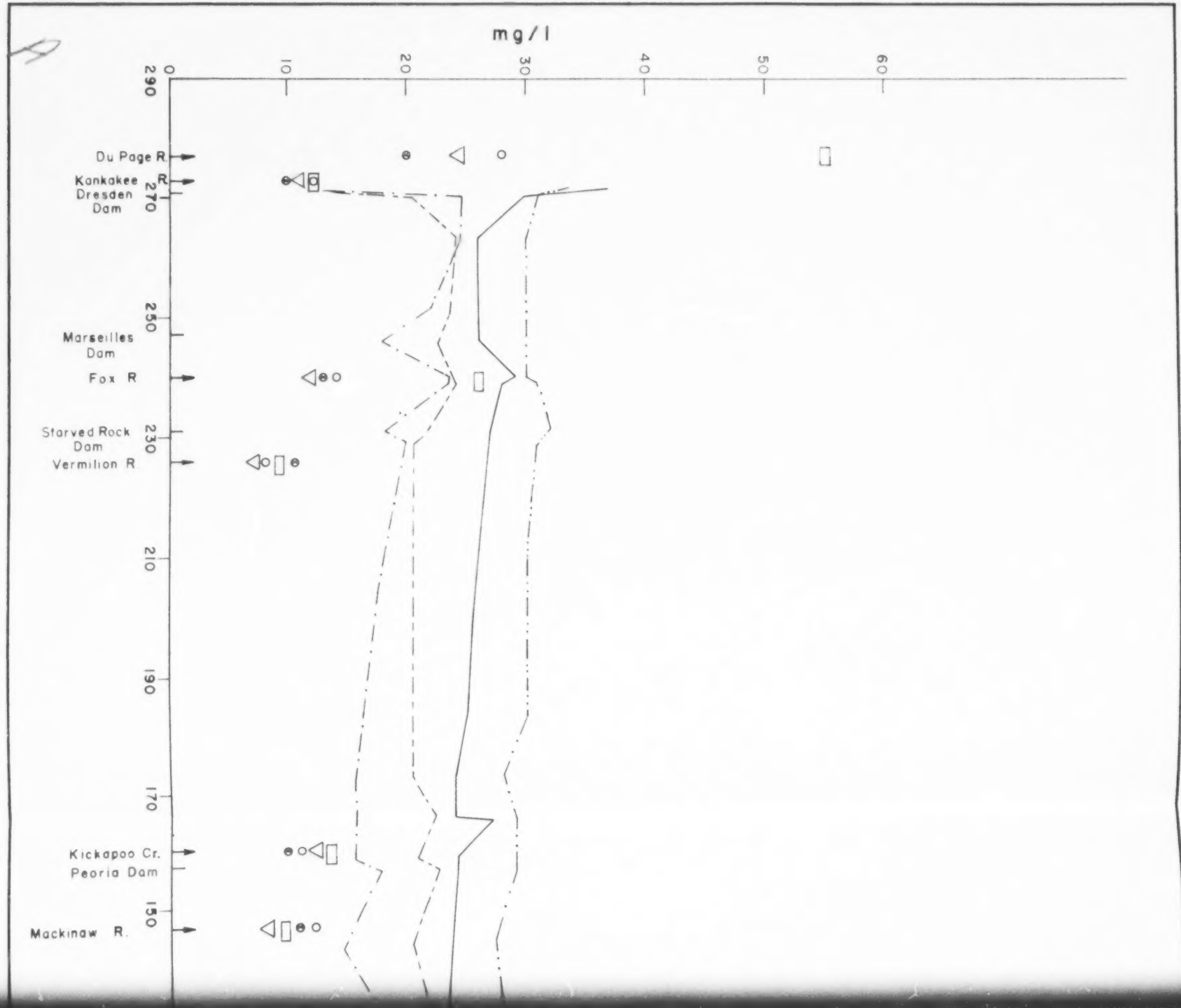


GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

CHLORIDE AVERAGES
JAN. & FEB. 1962
UPPER ILLINOIS RIVER SYSTEM

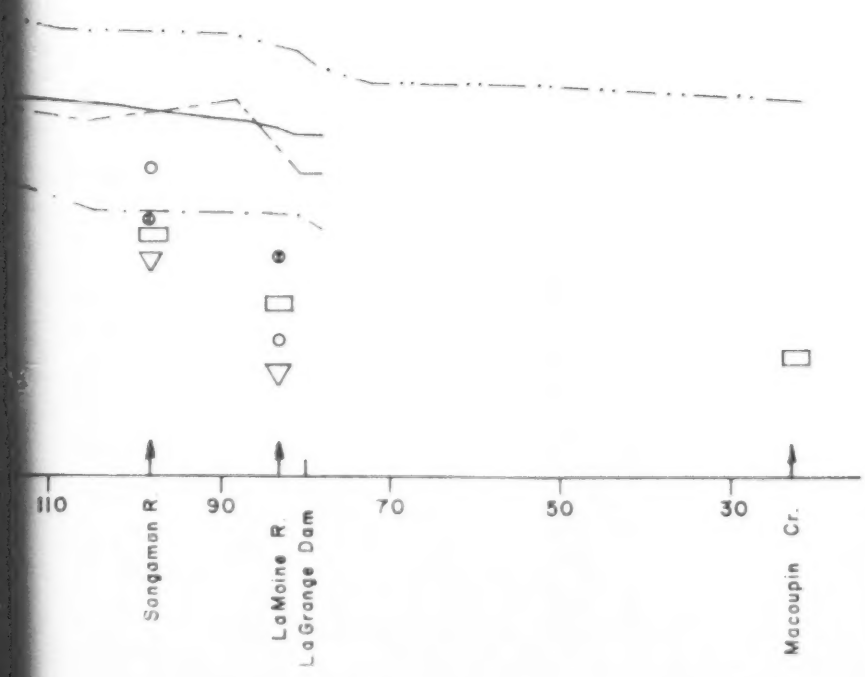
DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE V-18


mg/l
0
10
20
30
40
50
60
290
270
250
230
210
190
170
150
Du Page R.
Kankakee R.
Dresden Dam
Marseilles Dam
Fox R
Starved Rock Dam
Vermilion R
Kickapoo Cr.
Peoria Dam
Mackinaw R.

190
170
150
130
110
90
70
50
30
Kickapoo Cr.
Peoria Dam
Mackinaw R.
Spoon R.
Sangamon R.
LaMoine R.
LaGrange Dam
Macoupin Cr.

B



LEGEND

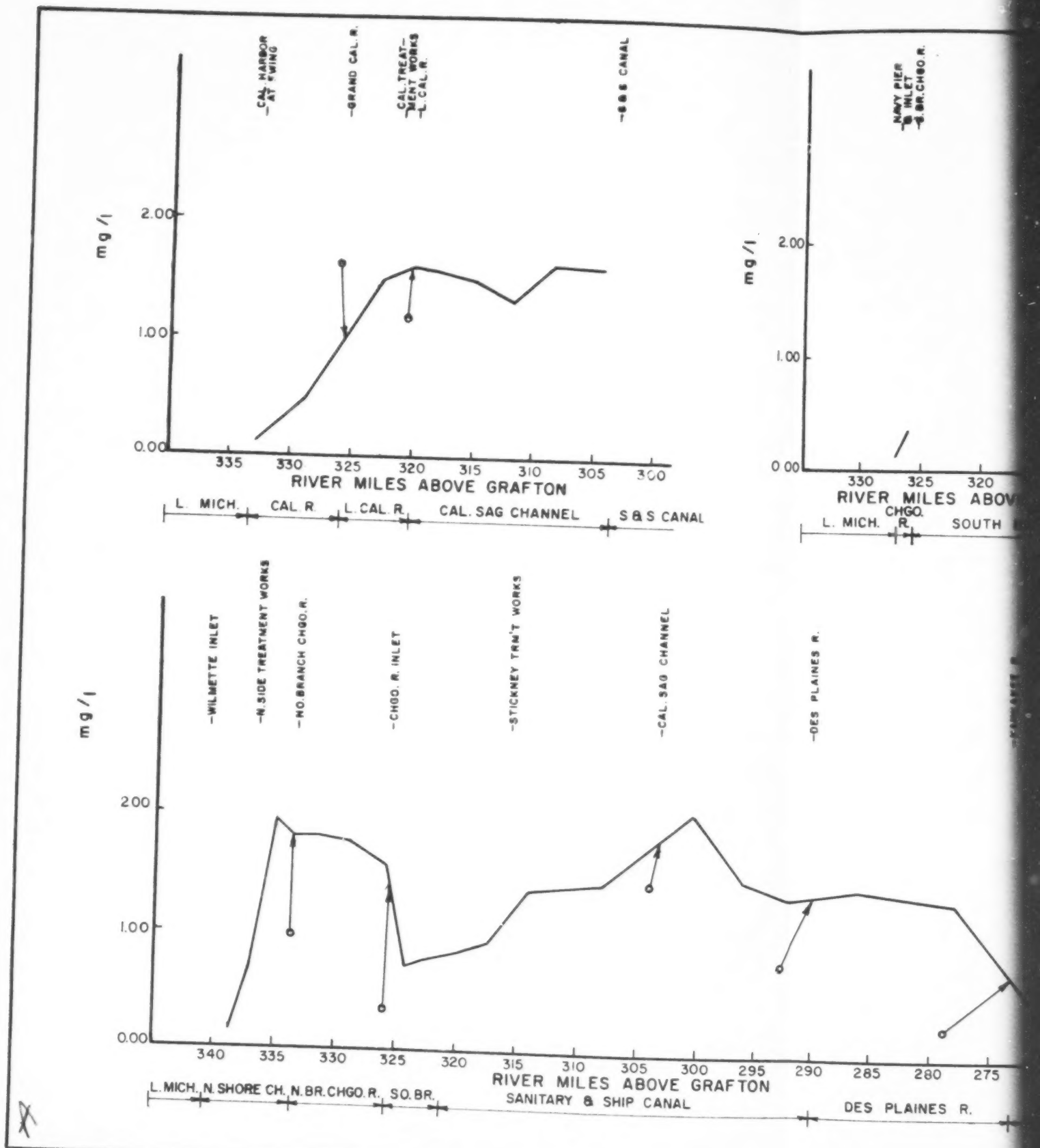
Main Stream	Tributaries Loadings
Nov. 1961	○
Mar. 1962	⊗
Apr. 1962	▽
July 1962	□

GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

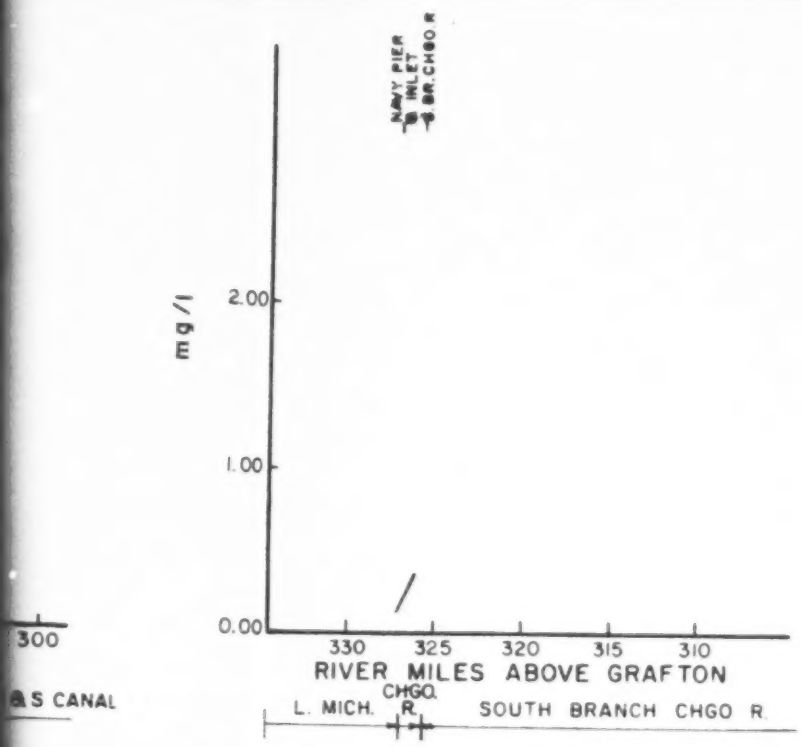
CHLORIDE AVERAGES
LOWER ILLINOIS RIVER SYSTEM

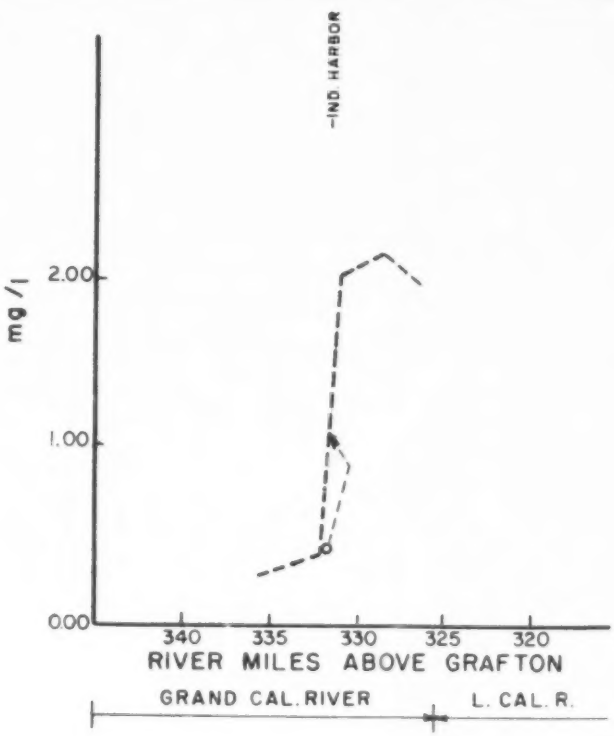
DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

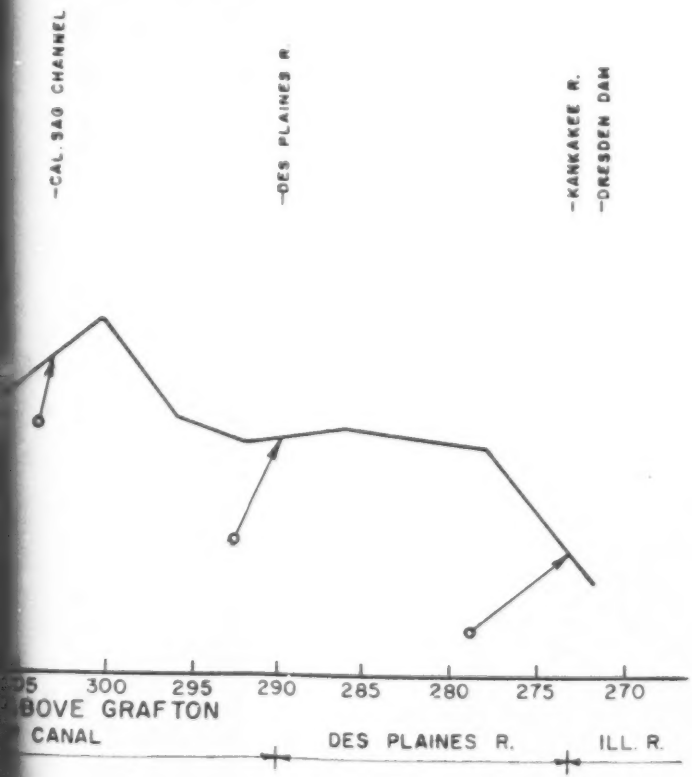
FIGURE V-19

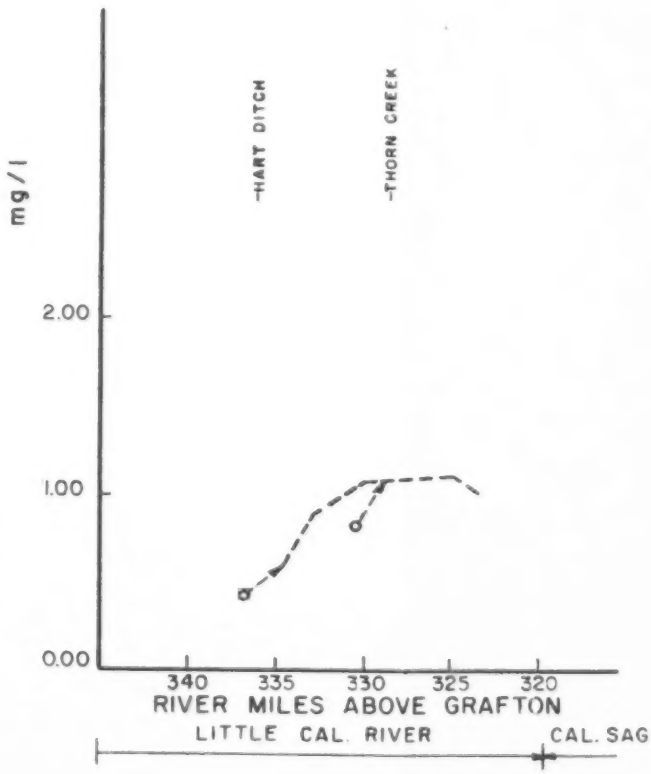


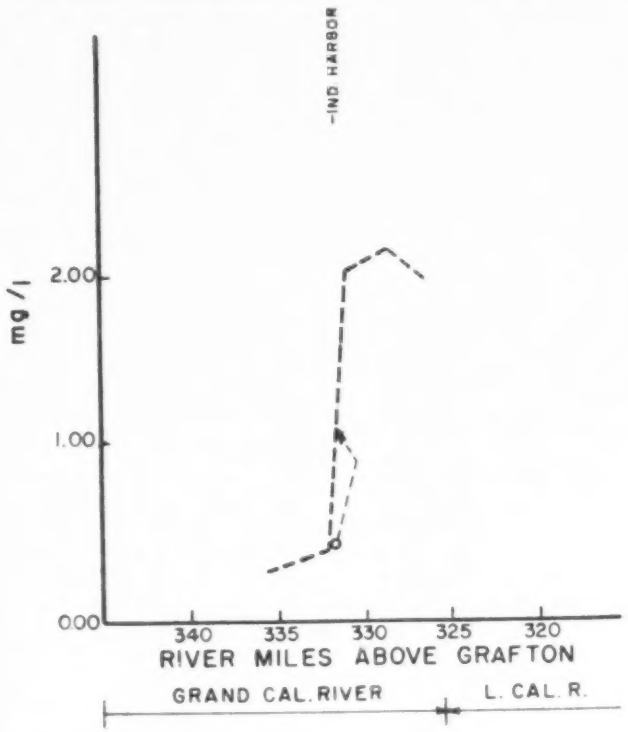
CAL. HARBOR AT KWING
GRAND CAL. R.
CAL. TREATMENT WORKS
L. CAL. R.
S & S CANAL
mg/l
2.00
1.00
0.00
335
330
325
320
315
310
305
300
RIVER MILES ABOVE GRAFTON
L. MICH.
CAL. R.
L. CAL. R.
CAL. SAG CHANNEL
S & S CANAL
NAVY PIER & INLET
S. BR. CHGO. R.
mg/l
2.00
1.00
0.00
330
325
320
RIVER MILES ABOV
L. MICH.
CHGO. R.
SOUTH
WILMETTE INLET
N. SIDE TREATMENT WORKS
NO. BRANCH CHGO. R.
CHGO. R. INLET
STICKNEY TRM'T WORKS
CAL. SAG CHANNEL
DES PLAINES R.
mg/l
2.00
1.00
0.00
340
335
330
325
320
315
310
305
300
295
290
285
280
275
RIVER MILES ABOVE GRAFTON
L. MICH.
N. SHORE CH.
N. BR. CHGO. R.
SO. BR.
SANITARY & SHIP CANAL
DES PLAINES R.


NAVY PIER
INLET
BR. CHGO R
mg/l
2.00
1.00
0.00
330
325
320
315
310
RIVER MILES ABOVE GRAFTON
CHGO. R.
L. MICH.
SOUTH BRANCH CHGO R


IND HARBOR
mg/l
2.00
1.00
000
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
GRAND CAL. RIVER
L. CAL. R.


CAL. SAG CHANNEL
DES PLAINES R
KANKAKEE R.
DRESDEN DAM
300
295
290
285
280
275
270
ABOVE GRAFTON
CANAL
DES PLAINES R.
ILL. R.

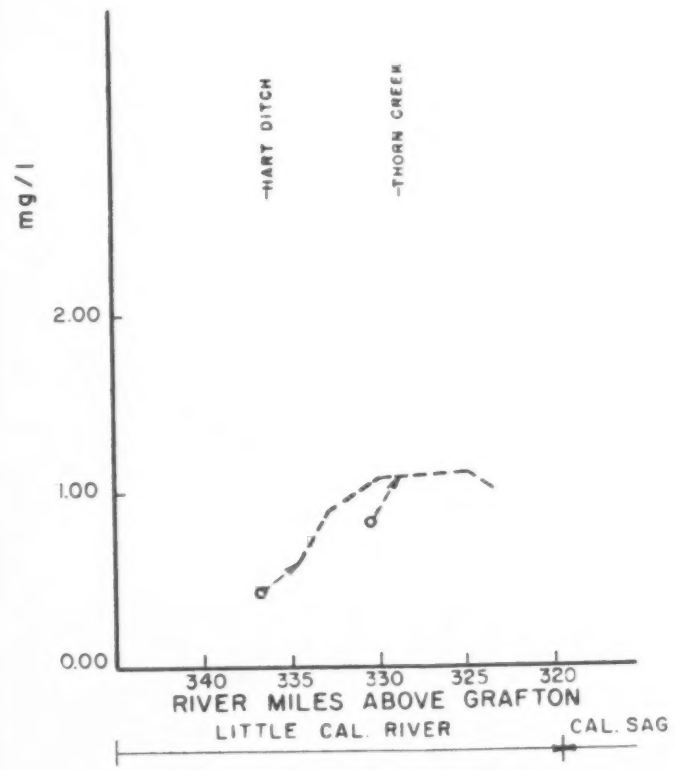

HART DITCH
THORN CREEK
mg/l
2.00
1.00
0.00
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
LITTLE CAL. RIVER
CAL. SAG



LEGEND

JAN. ————

FEB. - - - - - - - - - -

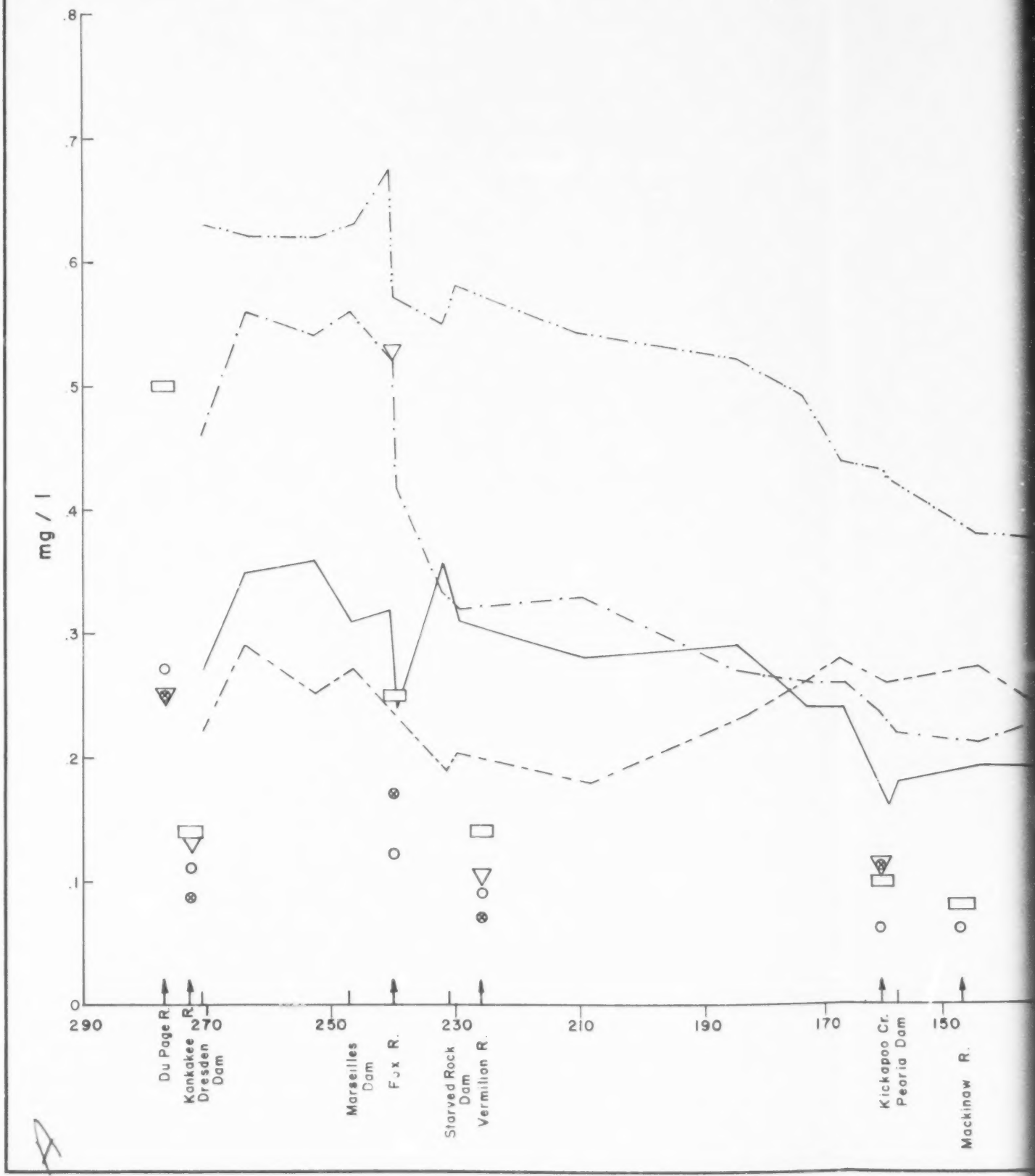


GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

ABS AVERAGES
JAN. & FEB. 1962
UPPER ILLINOIS RIVER SYSTEM

DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE V-20

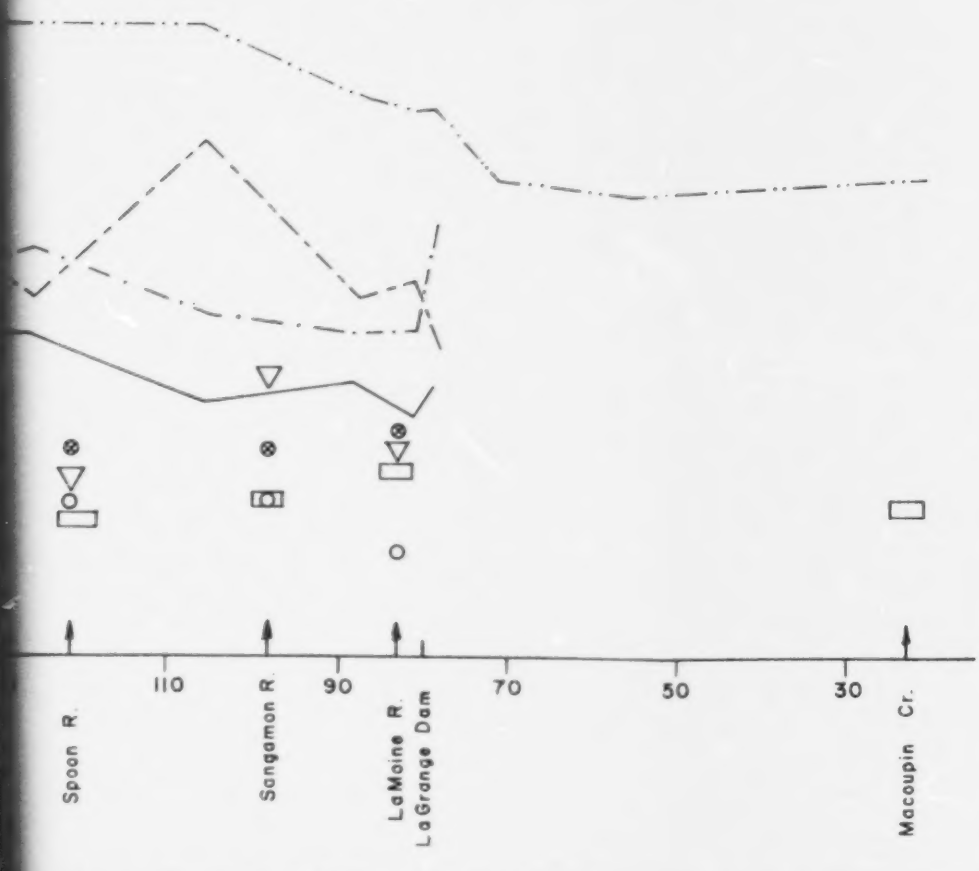

.8
.7
.6
.5
.4
.3
.2
.1
0
mg / l
290
270
250
230
210
190
170
150
Du Page R.
Kankakee R.
Dresden Dam
Marseilles Dam
Fox R.
Starved Rock Dam
Vermilion R.
Kickapoo Cr.
Peoria Dam
Mackinaw R.

190
170
150
130
110
90
70
50
30
Kickapoo Cr.
Peoria Dam
Mackinaw R.
Spoon R.
Sangamon R.
LaMoine R.
LaGrange Dam
Macoupin Cr.

B

LEGEND

Main Stream	Tributaries Loadings
Nov. 1961	○
Mar. 1962	⊗
Apr. 1962	▽
July 1962	□



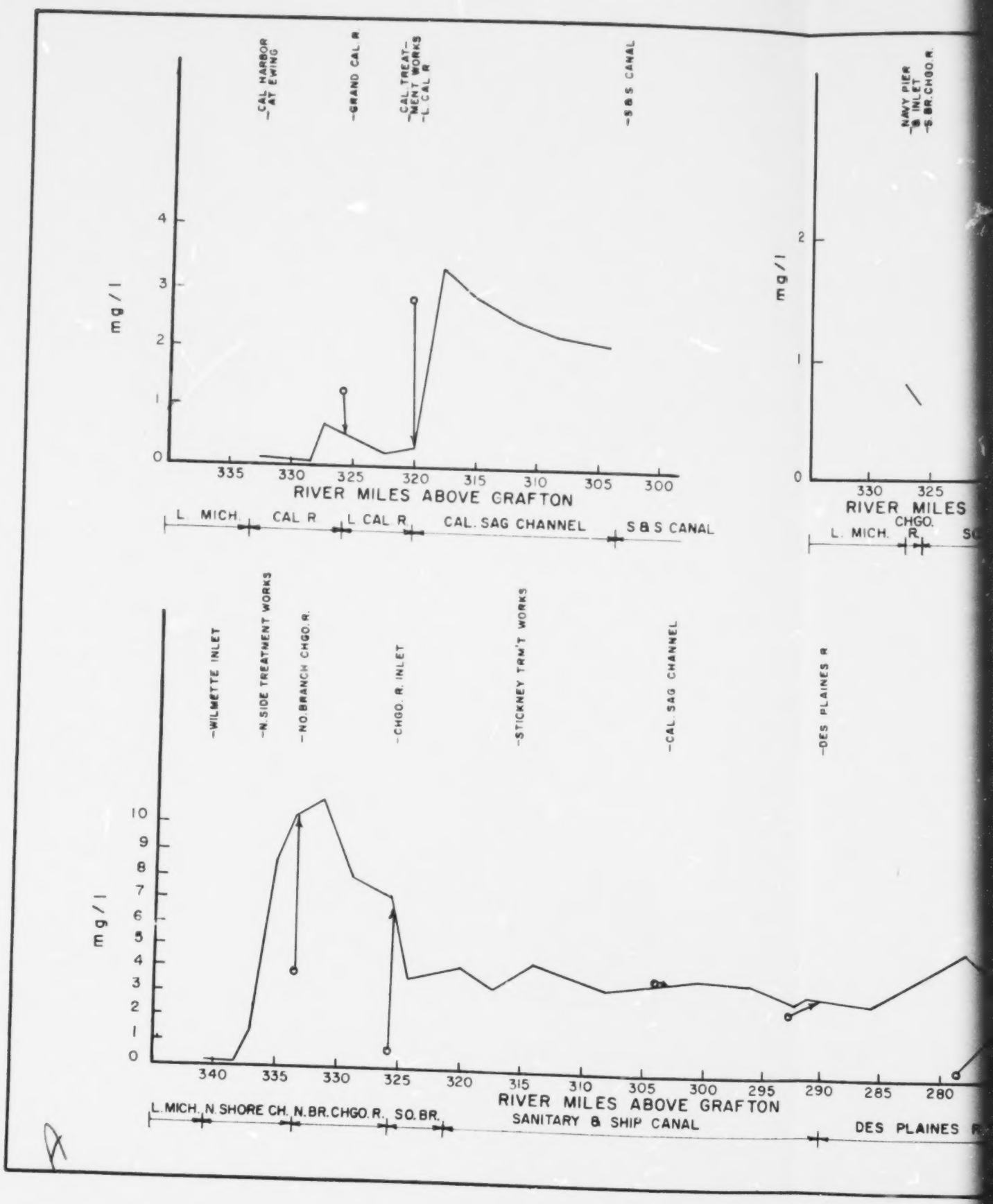
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

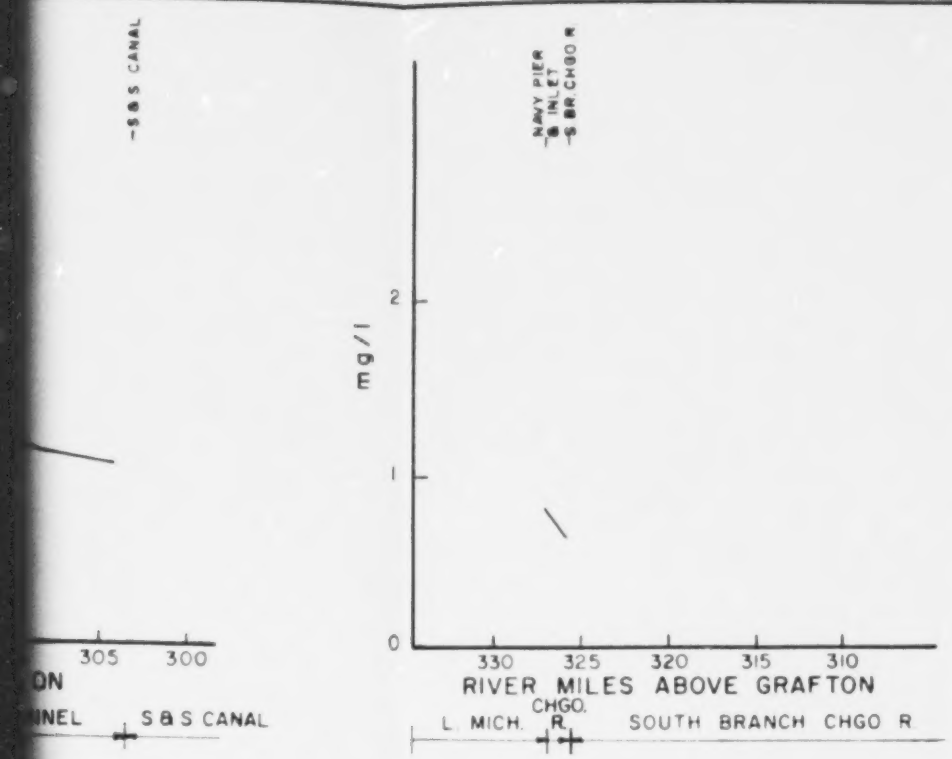
ALKYL BENZENE
SULFONATE AVERAGES
LOWER ILLINOIS RIVER SYSTEM

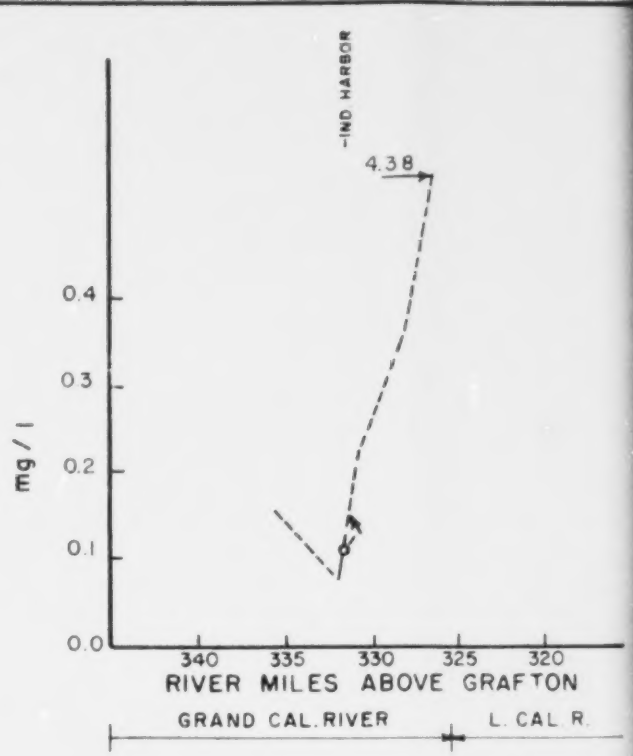
DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

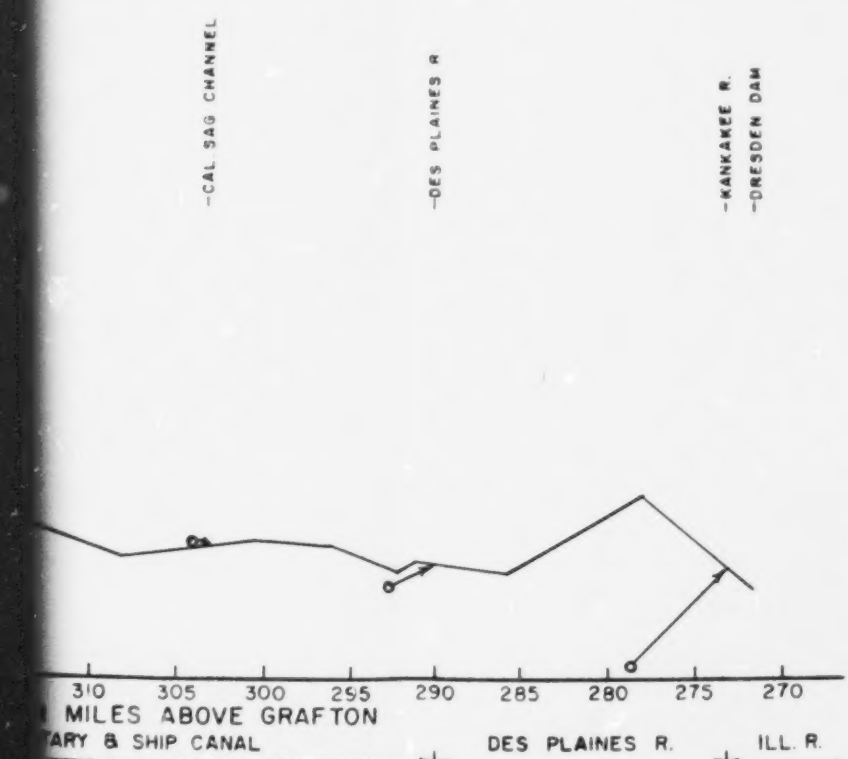
B

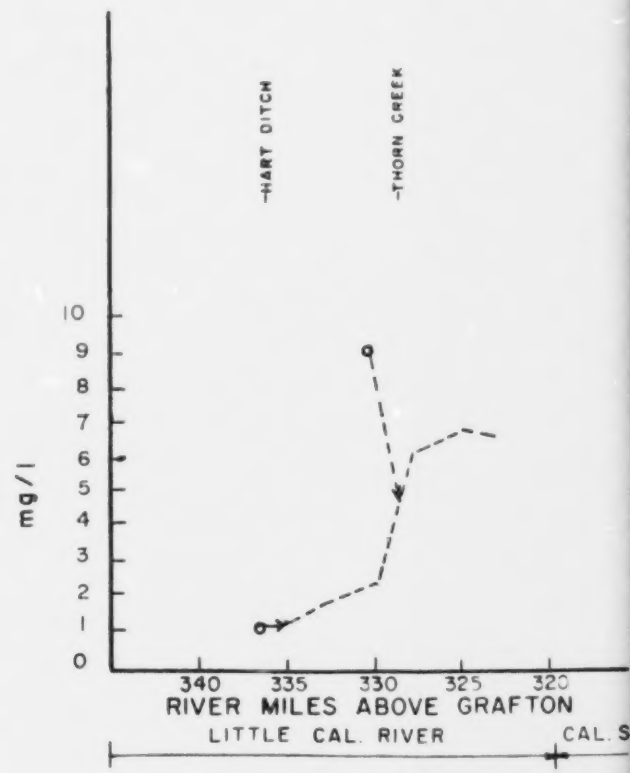
FIGURE V-21

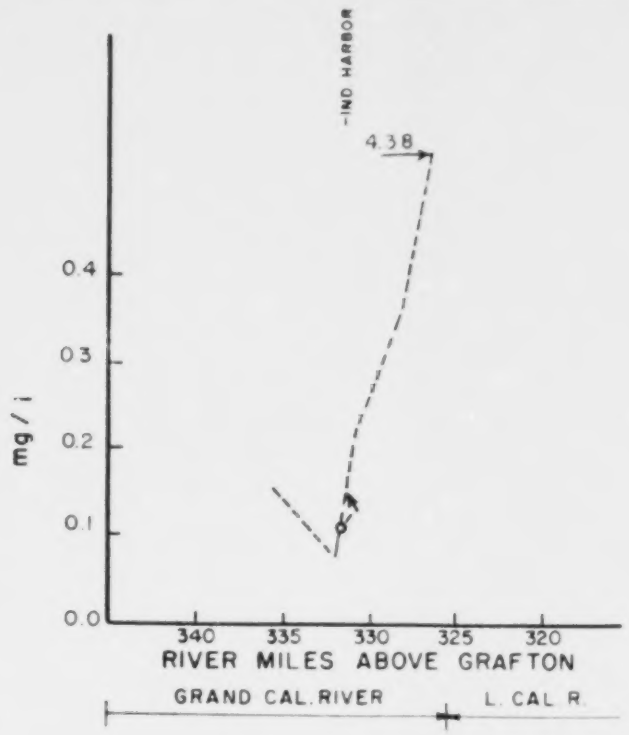

CAL HARBOR AT EWING
GRAND CAL R.
CAL TREAT-MENT WORKS L CAL R
S B S CANAL
mg/l
RIVER MILES ABOVE CRAFTON
L. MICH.
CAL R
L CAL R.
CAL. SAG CHANNEL
S B S CANAL
NAVY PIER S INLET S BR. CHGO R.
CHGO.
WILMETTE INLET
N. SIDE TREATMENT WORKS
NO. BRANCH CHGO. R.
CHGO. R. INLET
STICKNEY TRM'T WORKS
CAL. SAG CHANNEL
DES PLAINES R
L. MICH. N. SHORE CH. N. BR. CHGO. R. SO. BR.
SANITARY & SHIP CANAL
DES PLAINES R.


-S & S CANAL
NAVY PIER
-S INLET
-S BR. CHGO R
mg/l
2
1
0
330
325
320
315
310
RIVER MILES ABOVE GRAFTON
305
300
ON
INEL
S & S CANAL
L. MICH.
CHGO. R.
SOUTH BRANCH CHGO R.


-IND HARBOR
4.38
mg/l
0.4
0.3
0.2
0.1
0.0
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
GRAND CAL. RIVER
L. CAL R.


-CAL SAG CHANNEL
-DES PLAINES R
-KANKAKEE R.
-DRESDEN DAM
310
305
300
295
290
285
280
275
270
MILES ABOVE GRAFTON
TARY & SHIP CANAL
DES PLAINES R.
ILL. R.

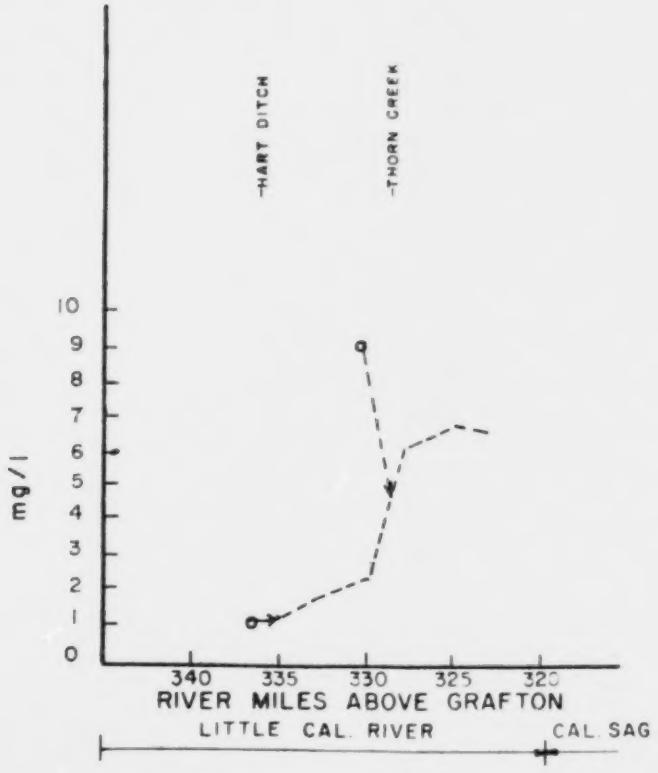

-HART DITCH
-THORN CREEK
mg/l
10
9
8
7
6
5
4
3
2
1
0
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
LITTLE CAL. RIVER
CAL. SA



LEGEND

JAN. ———

FEB. - - - - - -



GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

TOTAL PHOSPHATE AVERAGES
JAN. & FEB. 1962
UPPER ILLINOIS RIVER SYSTEM

DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE V-22

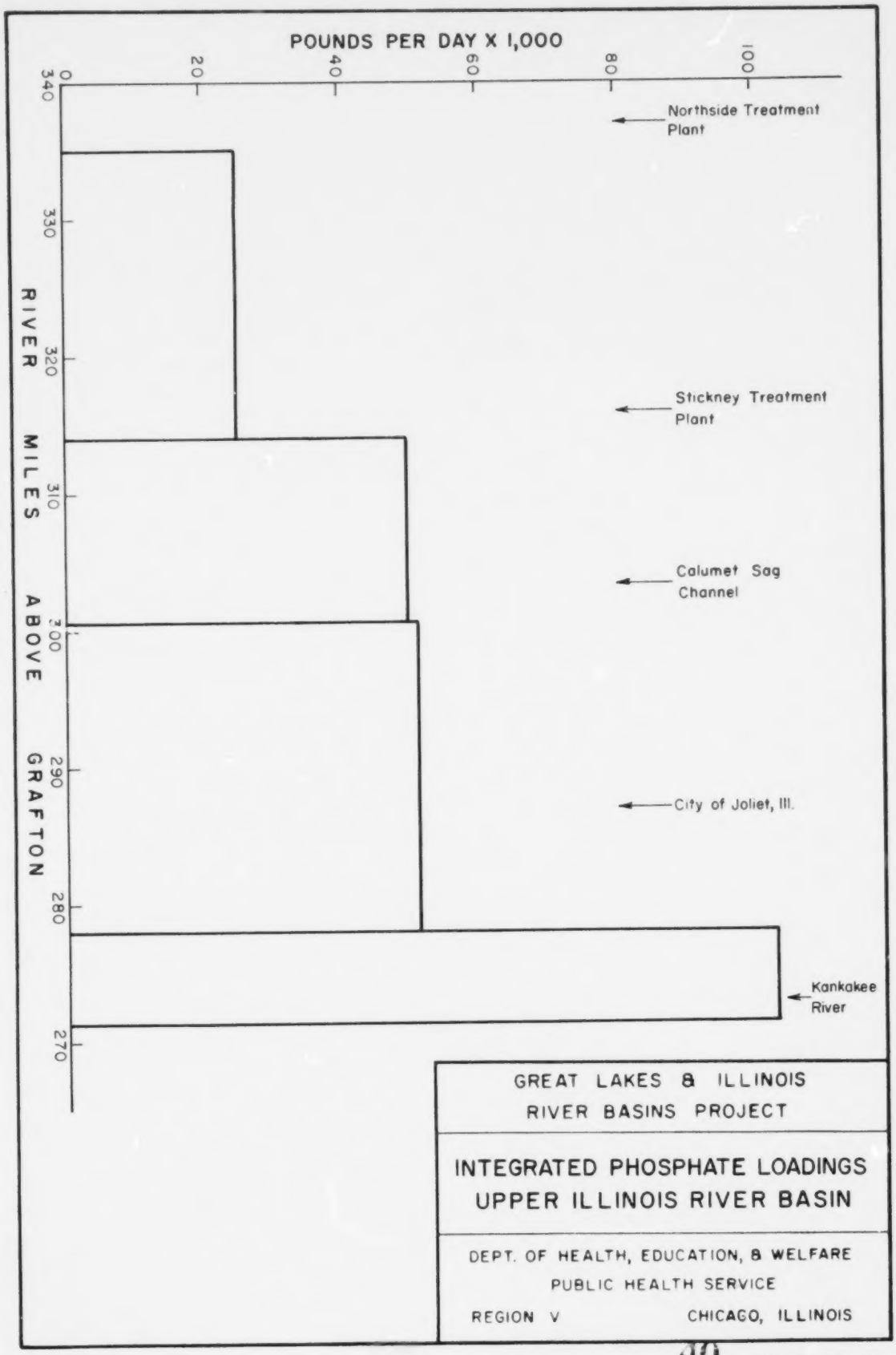
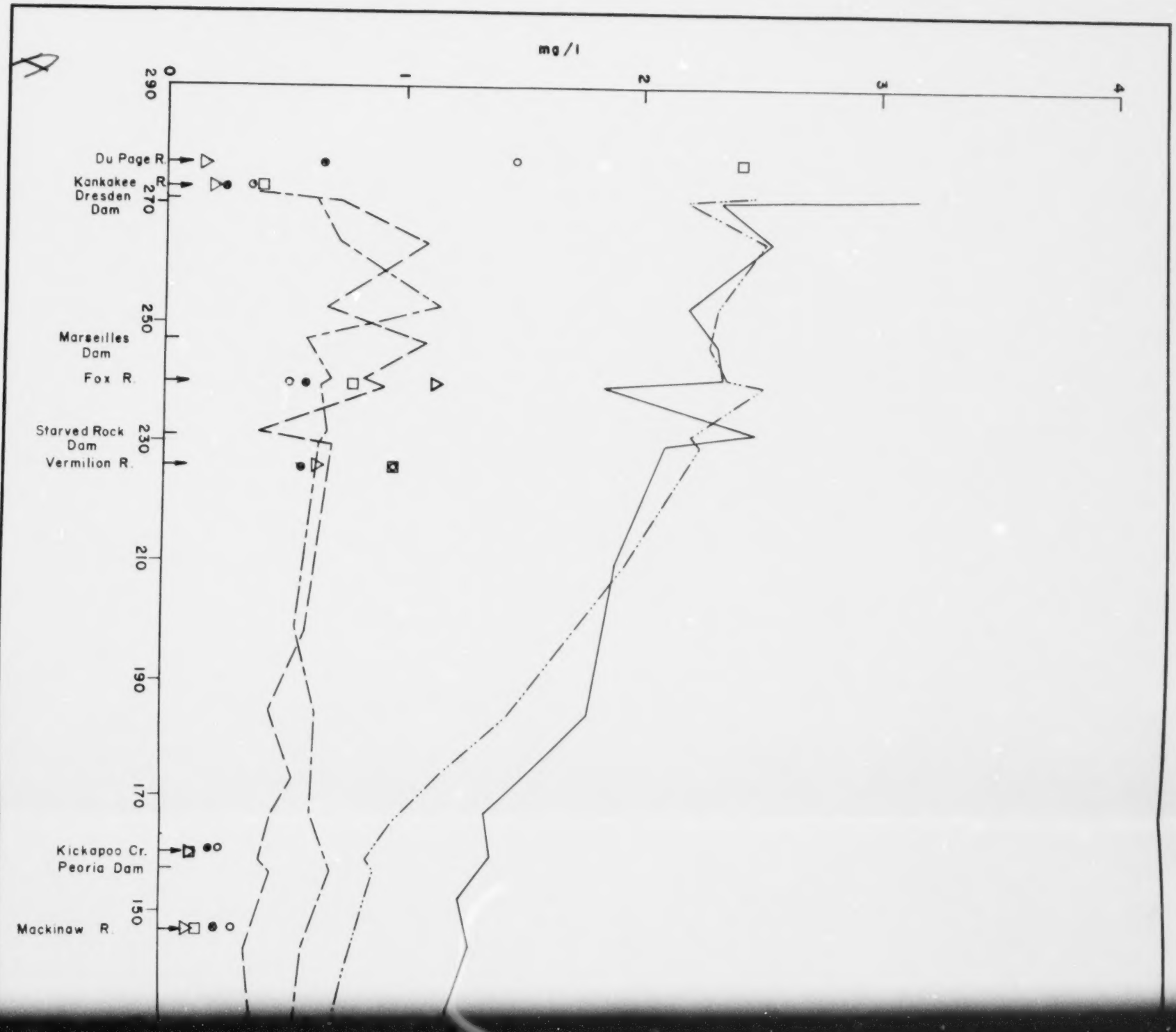

POUNDS PER DAY X 1,000
0
20
40
60
80
100
340
330
320
310
300
290
280
270
RIVER MILES ABOVE GRAFTON
Northside Treatment Plant
Stickney Treatment Plant
Calumet Sag Channel
City of Joliet, Ill.
Kankakee River
GREAT LAKES & ILLINOIS RIVER BASINS PROJECT
INTEGRATED PHOSPHATE LOADINGS UPPER ILLINOIS RIVER BASIN
DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V
CHICAGO, ILLINOIS

FIGURE V-23

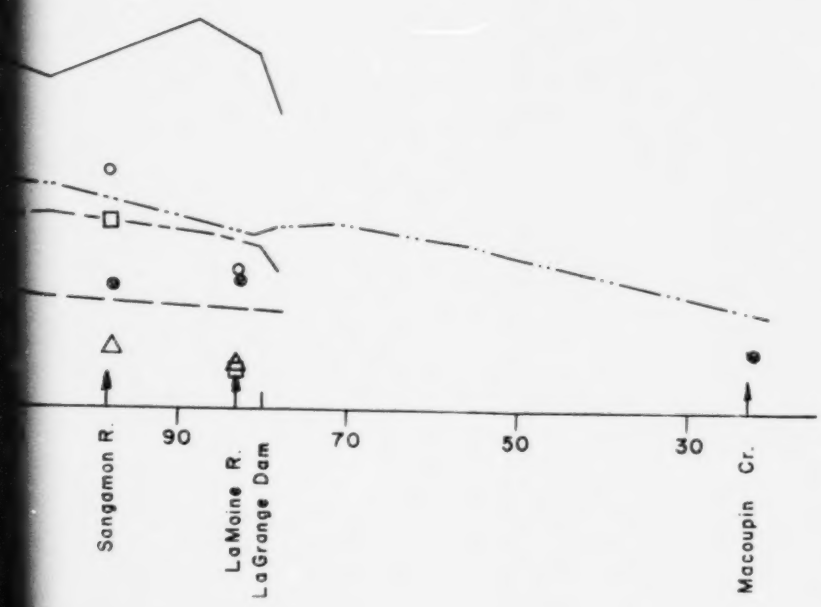

mg/l
0
1
2
3
4
290
270
250
230
210
190
170
150
Du Page R.
Kankakee R.
Dresden Dam
Marseilles Dam
Fox R.
Starved Rock Dam
Vermilion R.
Kickapoo Cr.
Peoria Dam
Mackinaw R.

170
150
130
110
90
70
50
30
Kickapoo Cr.
Peoria Dam
Mackinaw R
Spoon R.
Sangamon R.
LaMoine R.
LaGrange Dam
Macoupin Cr.

B

LEGEND

Main Stream	Tributaries Loadings
——— Nov. 1961	○
— - — Mar. 1962	⊗
—— —— Apr. 1962	▽
—·— July 1962	□

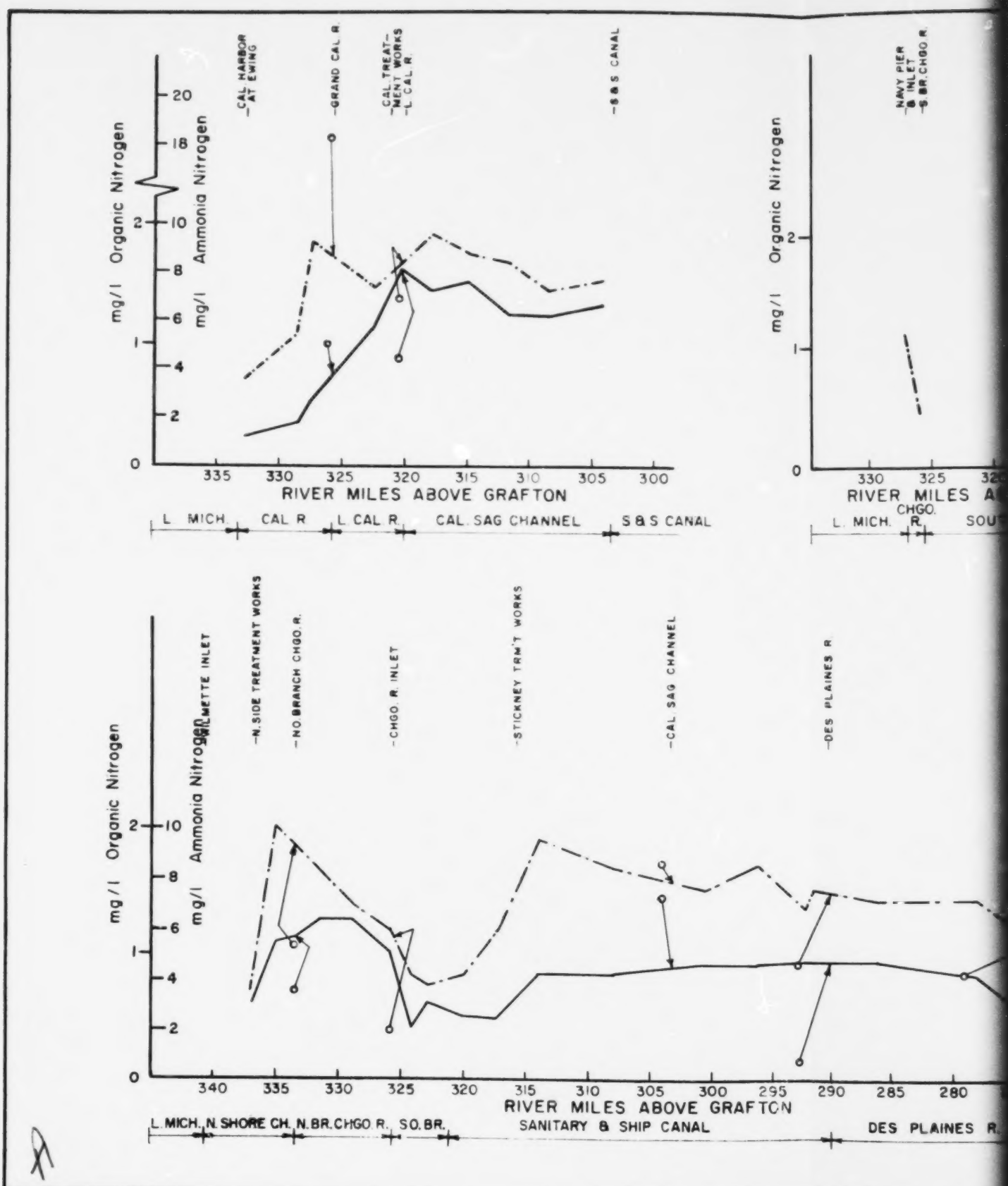


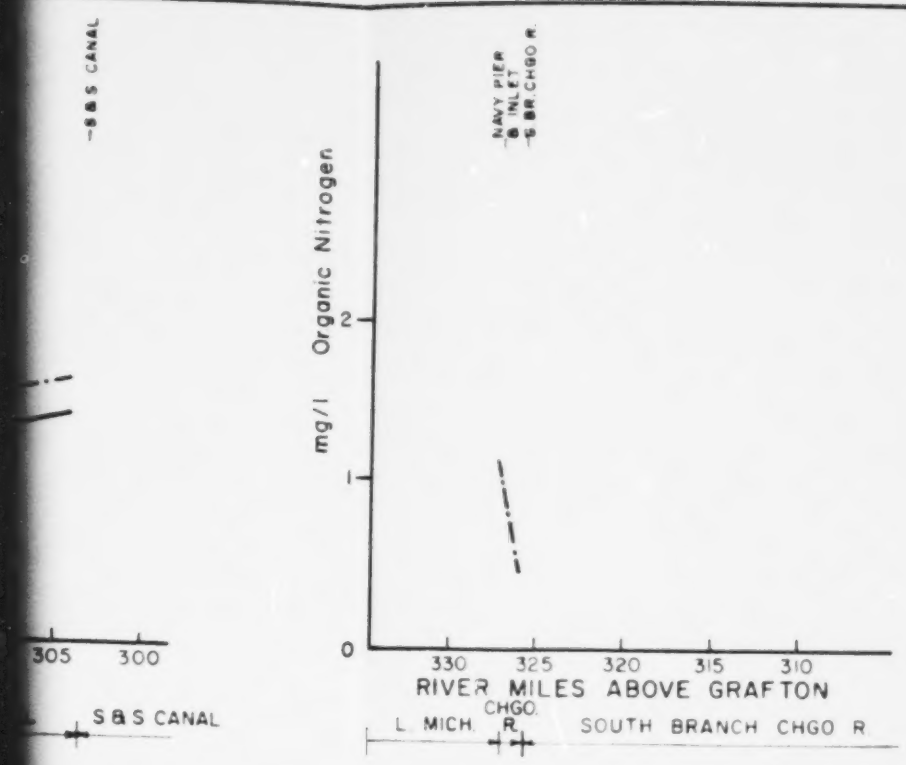
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

PHOSPHATE AVERAGES
LOWER ILLINOIS RIVER SYSTEM

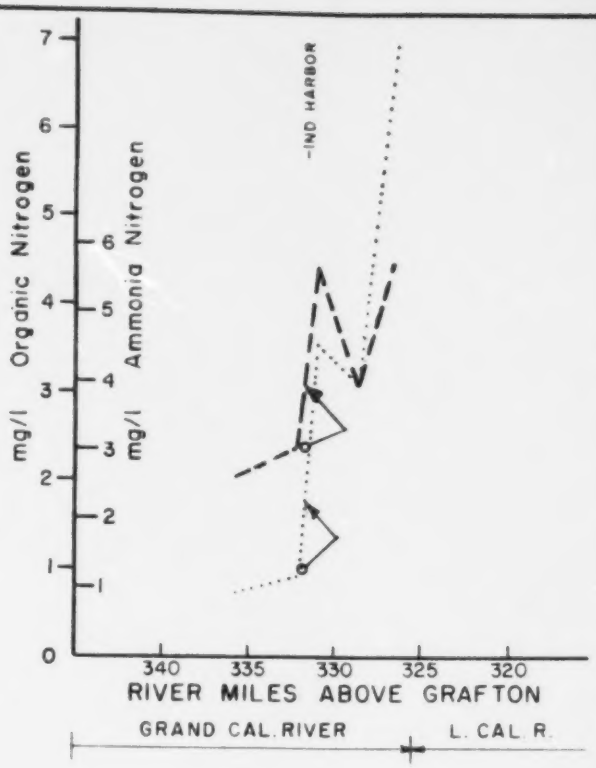
DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

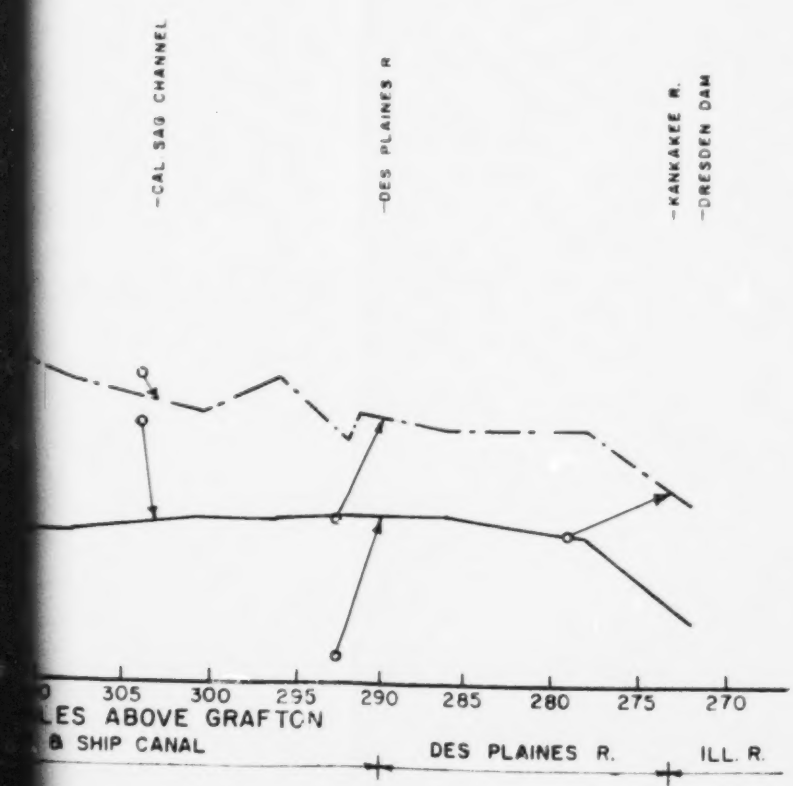
FIGURE V-24

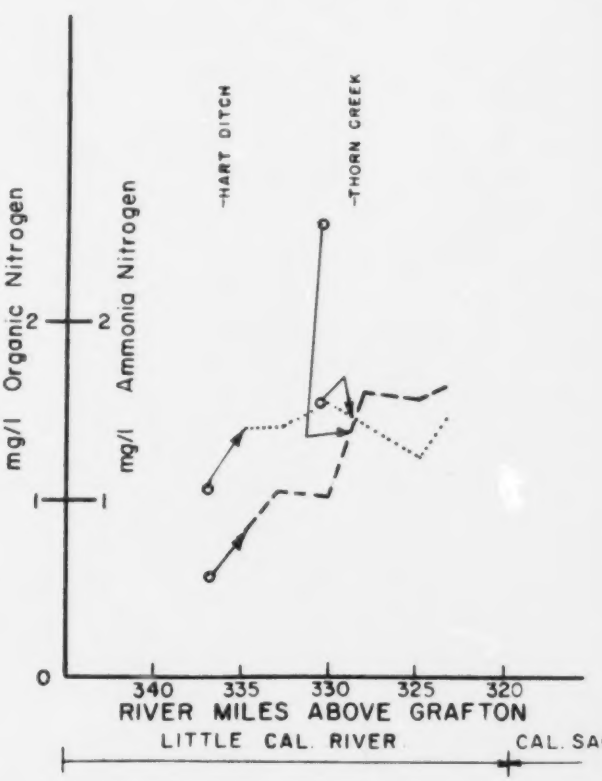

mg/l Organic Nitrogen
mg/l Ammonia Nitrogen
CAL HARBOR AT EWING
GRAND CAL R.
CAL TREATMENT WORKS L CAL R.
S & S CANAL
RIVER MILES ABOVE GRAFTON
L MICH.
CAL R
L CAL R.
CAL SAG CHANNEL
S & S CANAL
NAVY PIER & INLET S BR CHGO R.
CHGO. R.
L. MICH.
WILMETTE INLET
N. SIDE TREATMENT WORKS
NO BRANCH CHGO R.
CHGO. R. INLET
STICKNEY TRM'T WORKS
CAL SAG CHANNEL
DES PLAINES R.
L. MICH. N. SHORE CH. N. BR. CHGO R. SO. BR.
SANITARY & SHIP CANAL
DES PLAINES R.


-S & S CANAL
305
300
S & S CANAL

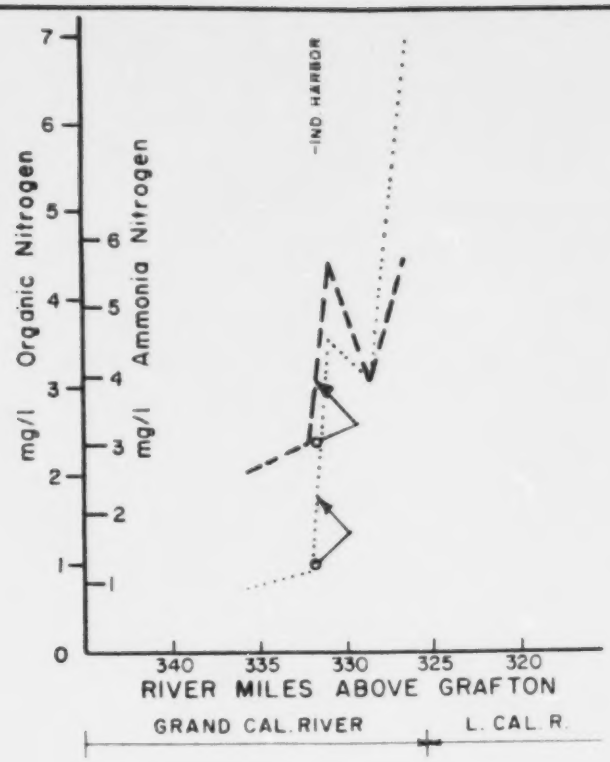
NAVY PIER
& INLET
-S BR. CHGO R.
mg/l Organic Nitrogen
0
1
2
330
325
320
315
310
RIVER MILES ABOVE GRAFTON
CHGO.
L. MICH. R.
SOUTH BRANCH CHGO R.


-IND HARBOR
mg/l Organic Nitrogen
mg/l Ammonia Nitrogen
0
1
2
3
4
5
6
7
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
GRAND CAL. RIVER
L. CAL. R.


-CAL SAG CHANNEL
-DES PLAINES R
-KANKAKEE R.
-DRESDEN DAM
305
300
295
290
285
280
275
270
LES ABOVE GRAFTON
& SHIP CANAL
DES PLAINES R.
ILL. R.


-HART DITCH
-THORN CREEK
mg/l Organic Nitrogen
mg/l Ammonia Nitrogen
0
1
2
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
LITTLE CAL. RIVER
CAL. SAG

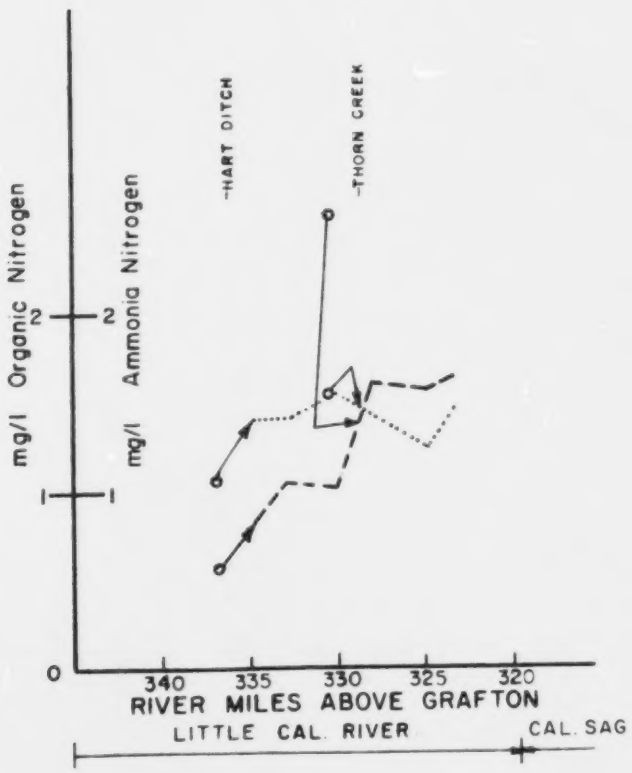
B



LEGEND

ORGANIC NITROGEN-
JAN. —·—·—
FEB. .....

AMMONIA NITROGEN-
JAN. ———
FEB. – – – – –

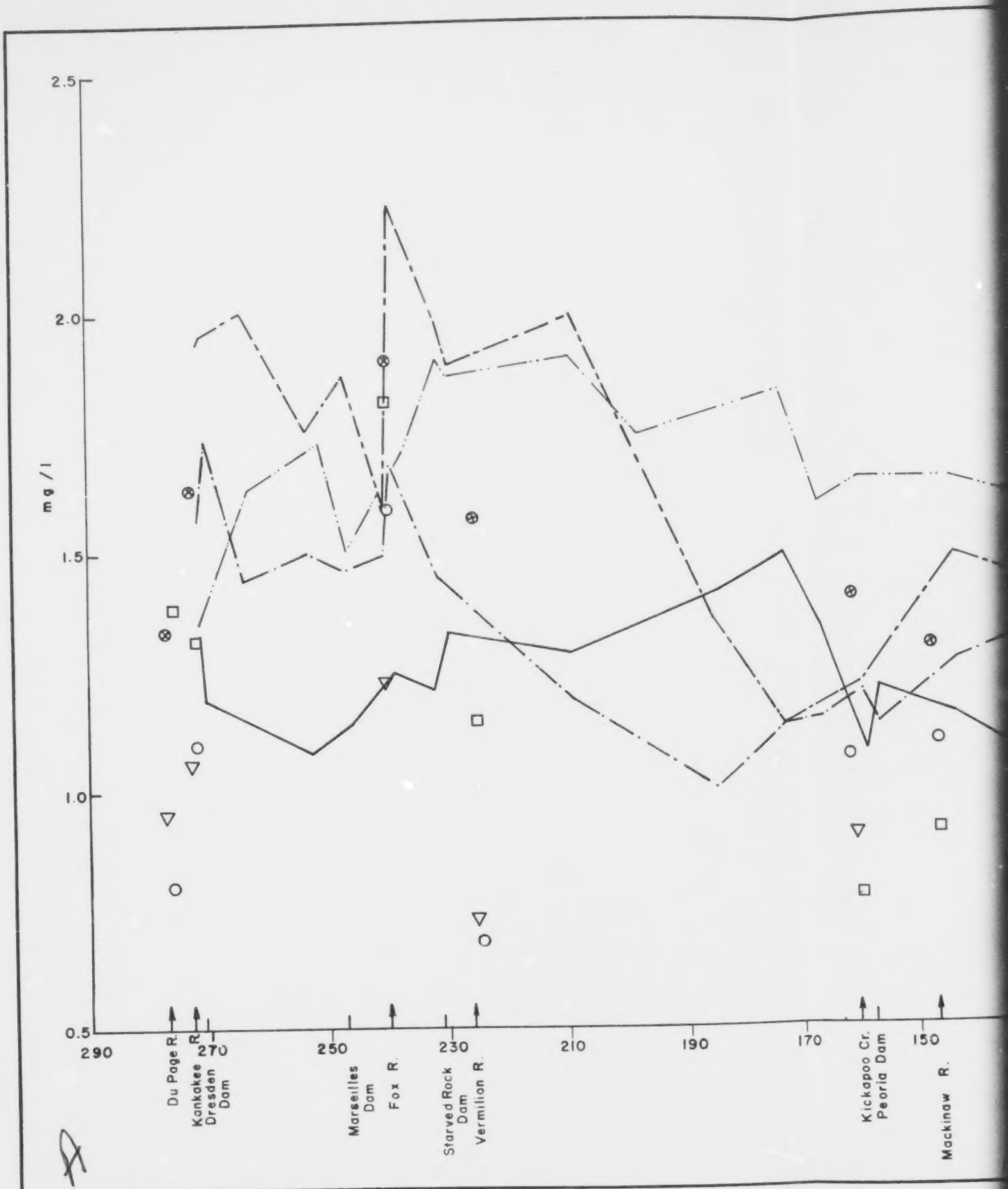


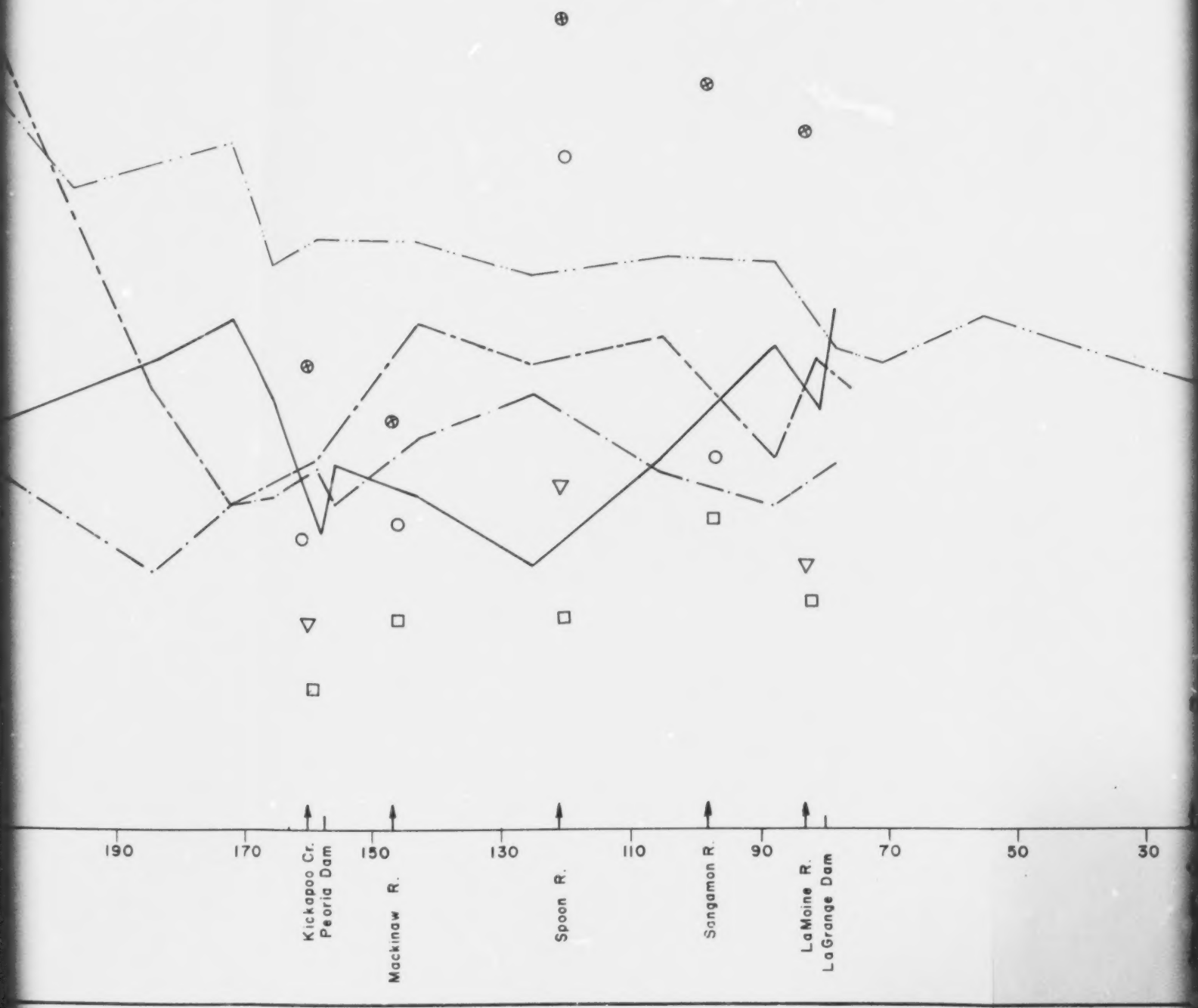
GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

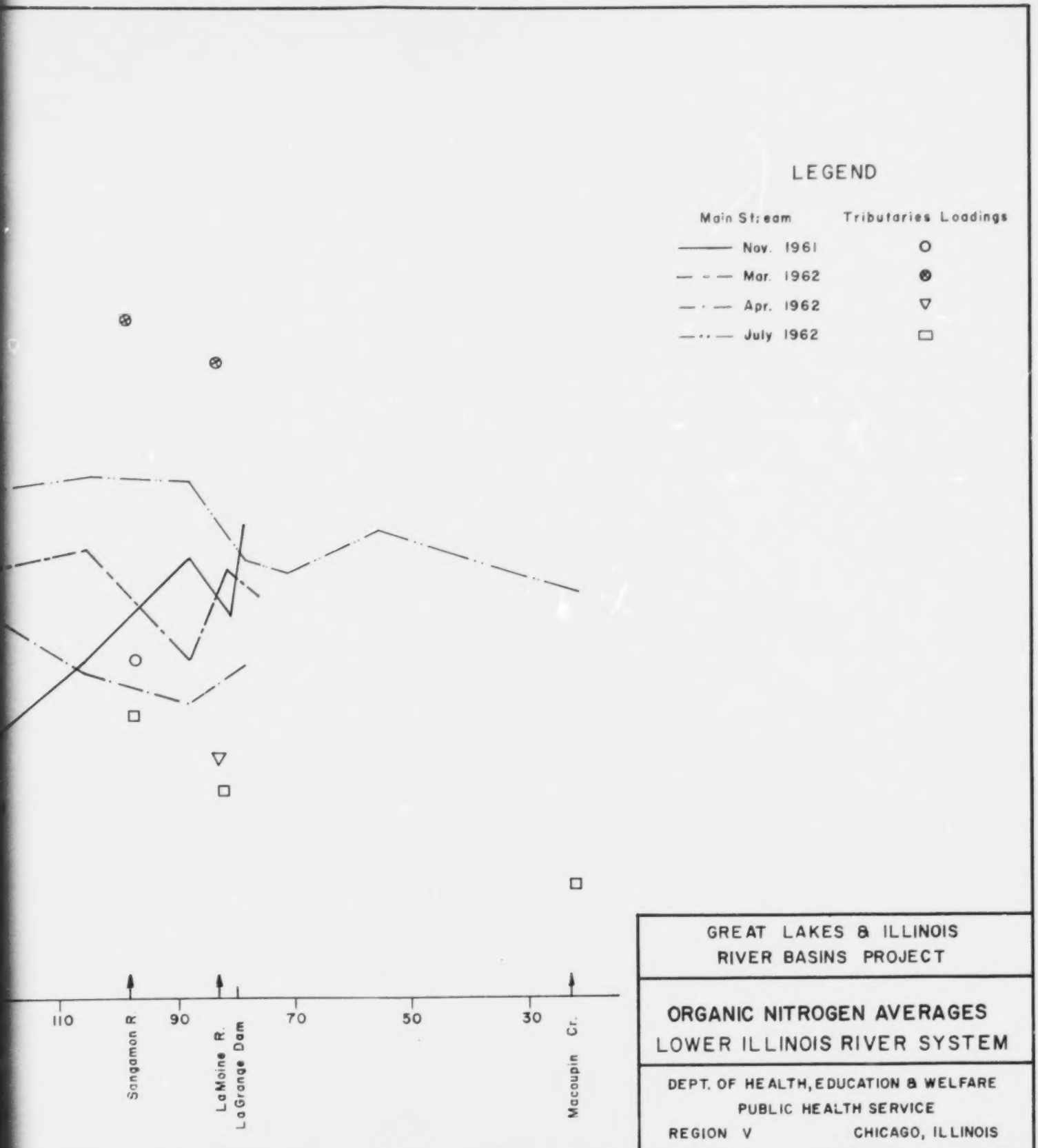
ORGANIC & AMMONIA NITROGEN AVERAGES - JAN. & FEB. 1962 UPPER ILLINOIS RIVER BASIN

DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE V-25


2.5
2.0
1.5
1.0
0.5
mg/l
290
270
250
230
210
190
170
150
Du Page R.
Kankakee R.
Dresden Dam
Marseilles Dam
Fox R.
Starved Rock Dam
Vermilion R.
Kickapoo Cr.
Peoria Dam
Mackinaw R.


190
170
150
130
110
90
70
50
30
Kickapoo Cr.
Peoria Dam
Mackinaw R.
Spoon R.
Sangamon R.
LaMoine R.
LaGrange Dam

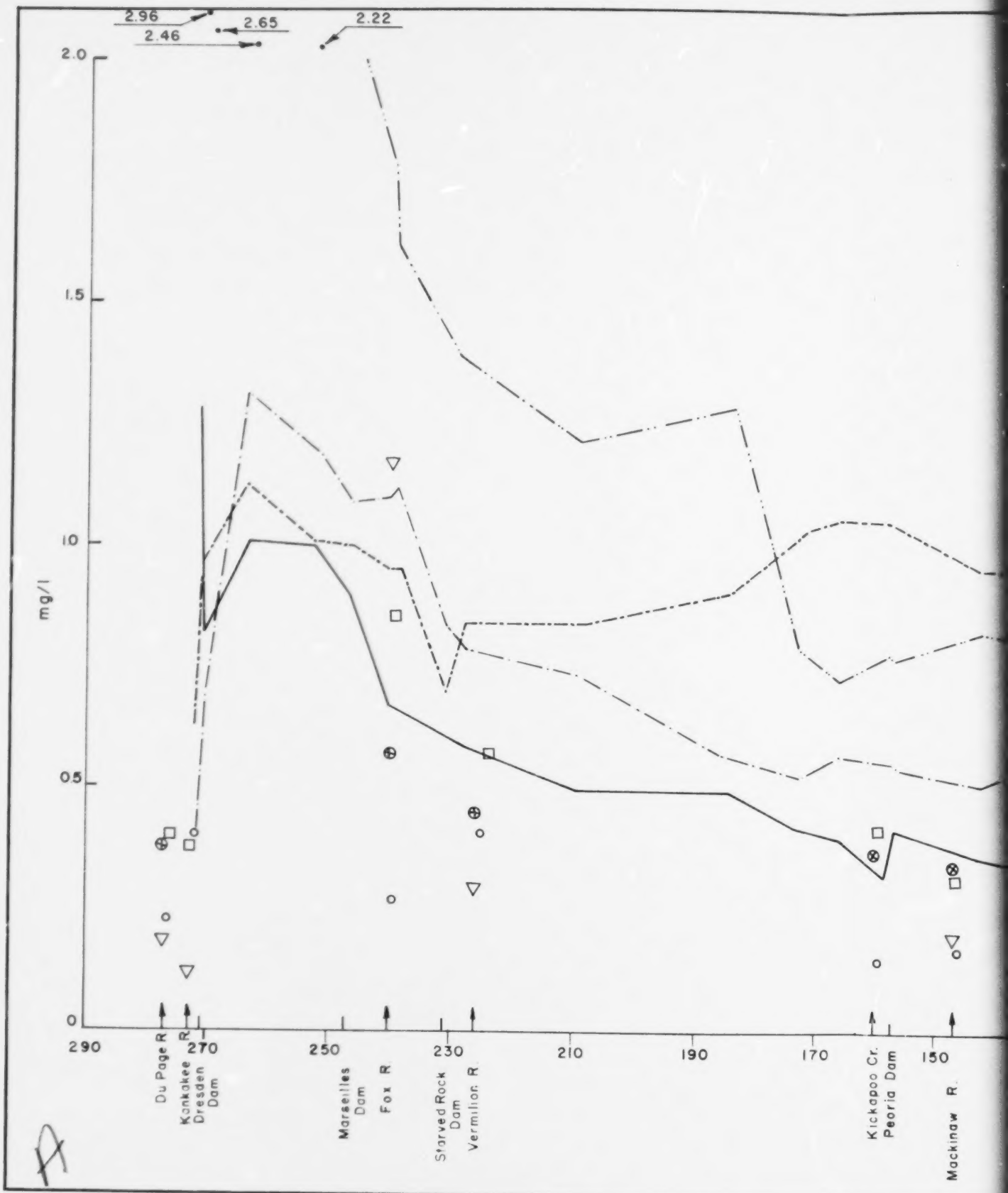


GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

ORGANIC NITROGEN AVERAGES
LOWER ILLINOIS RIVER SYSTEM

DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE V-26

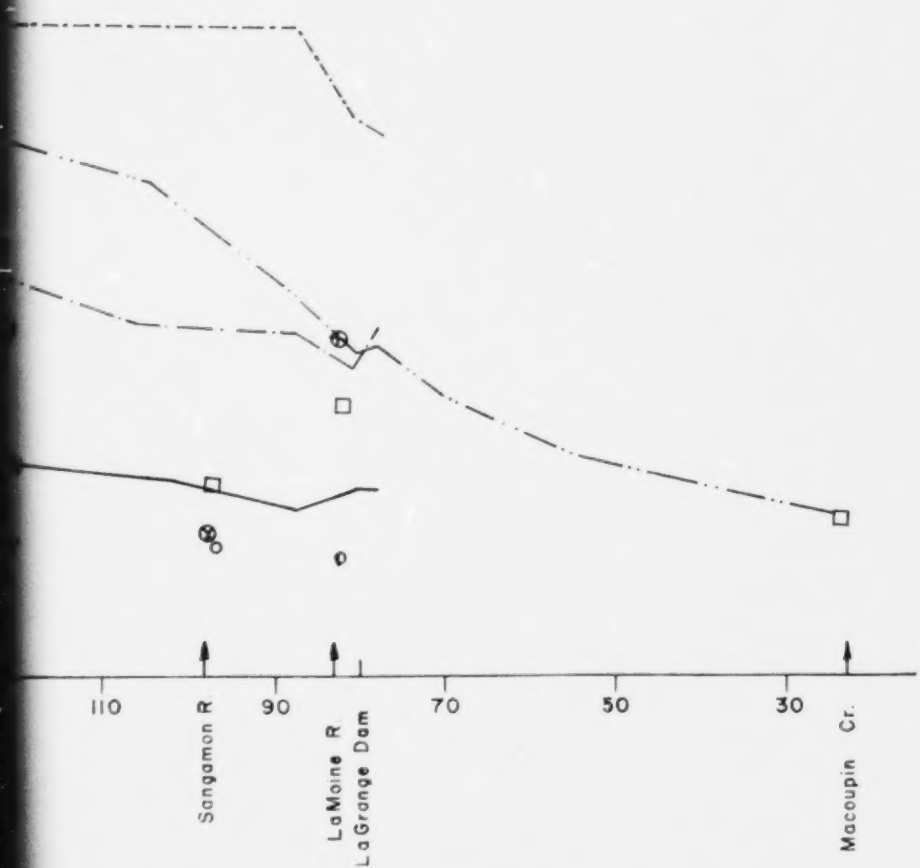

2.96
2.46
2.65
2.22
2.0
1.5
1.0
0.5
0
mg/l
290
270
250
230
210
190
170
150
Du Page R.
Kankakee R.
Dresden Dam
Marseilles Dam
Fox R.
Starved Rock Dam
Vermilion R.
Kickapoo Cr.
Peoria Dam
Mackinaw R.

190
170
150
130
110
90
70
50
30
Kickapoo Cr.
Peoria Dam
Mackinaw R.
Spoon R.
Sangamon R.
LaMoine R.
LaGrange Dam
Macoupin Cr.

B

LEGEND

Main Stream	Tributaries Loadings
Nov. 1961	○
Mar. 1962	⊗
Apr. 1962	▽
July 1962	□



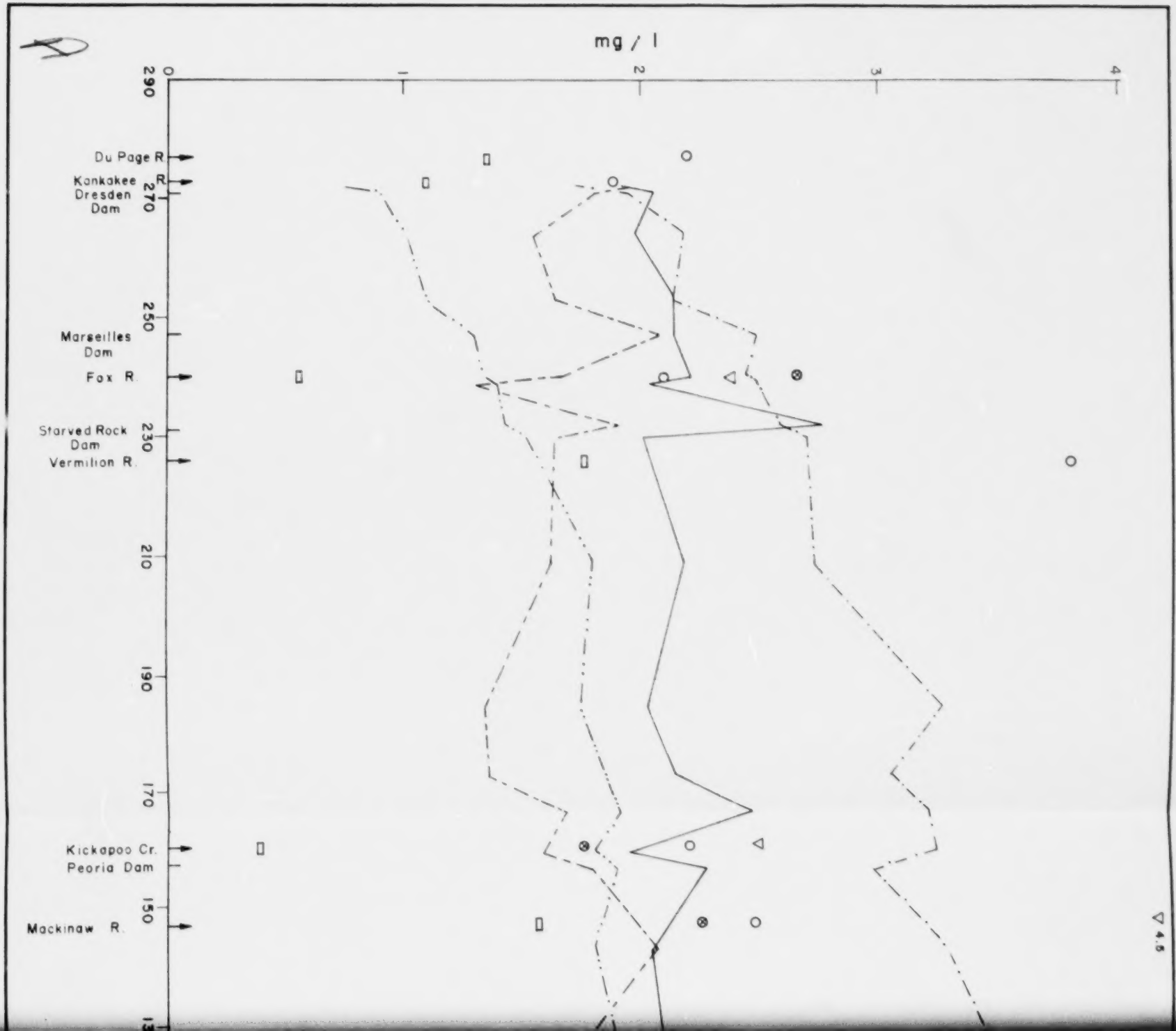
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

AMMONIA NITROGEN AVERAGES

LOWER ILLINOIS RIVER SYSTEM

DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE V-27


mg / l
0
1
2
3
4
290
270
250
230
210
190
170
150
Du Page R.
Kankakee R.
Dresden Dam
Marseilles Dam
Fox R.
Starved Rock Dam
Vermilion R.
Kickapoo Cr.
Peoria Dam
Mackinaw R.

▽ 4.5

190 170 150 130 110 90 70 50 30

Kickapoo Cr.
Peoria Dam

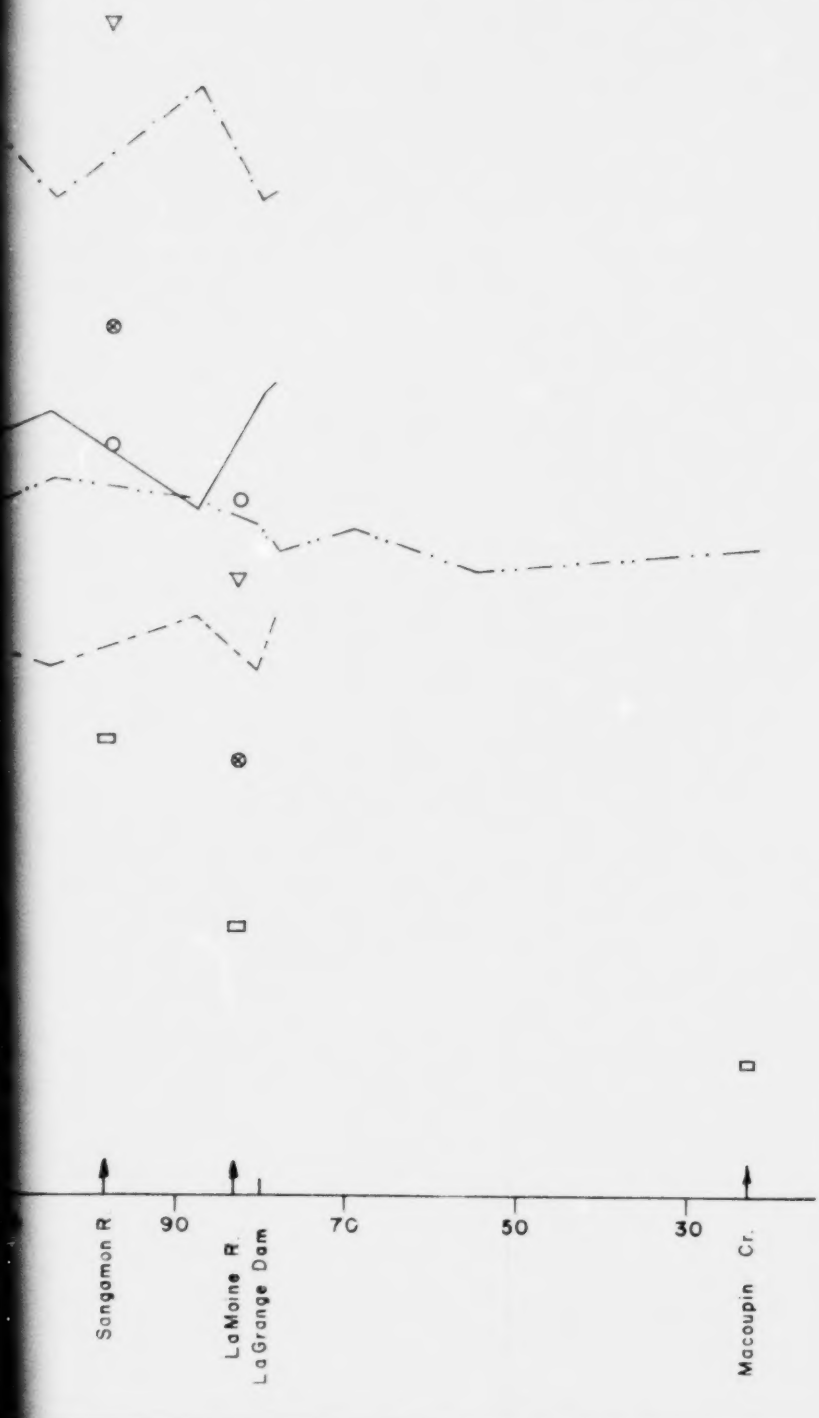
Mackinaw R

Spoon R.

Sangamon R

LaMoine R.
LaGrange Dam

B

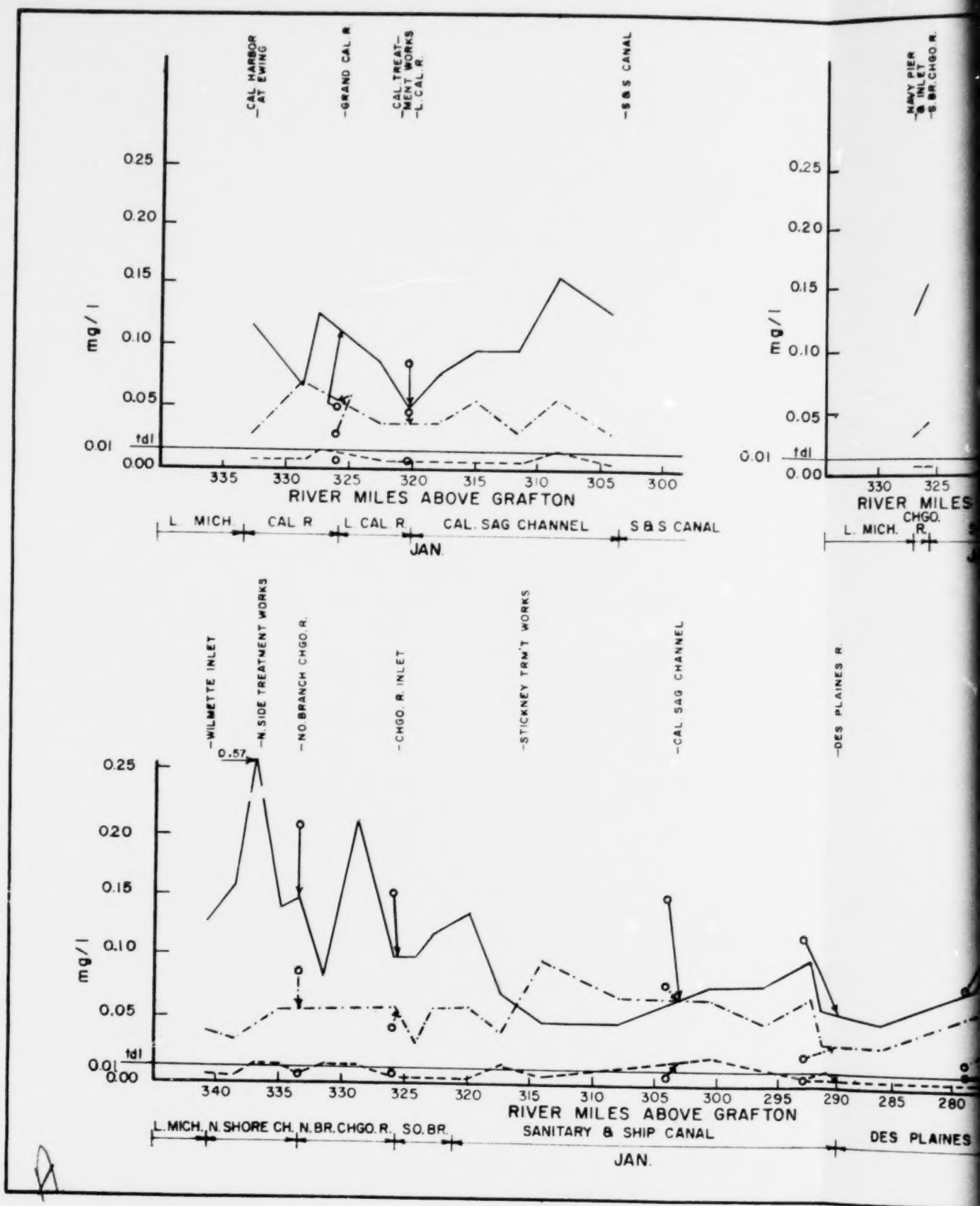


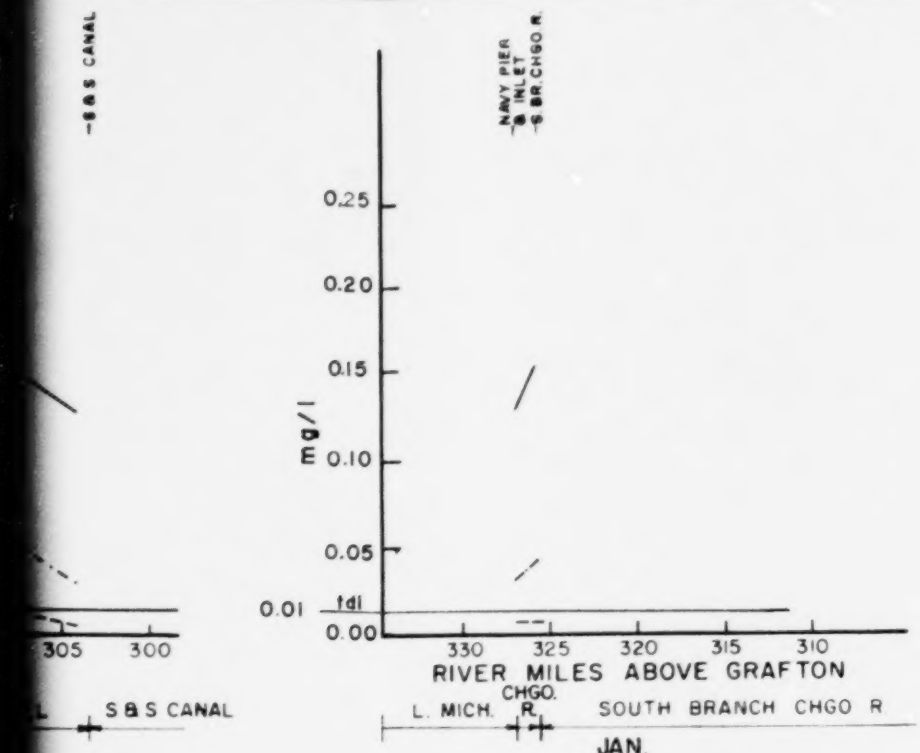
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

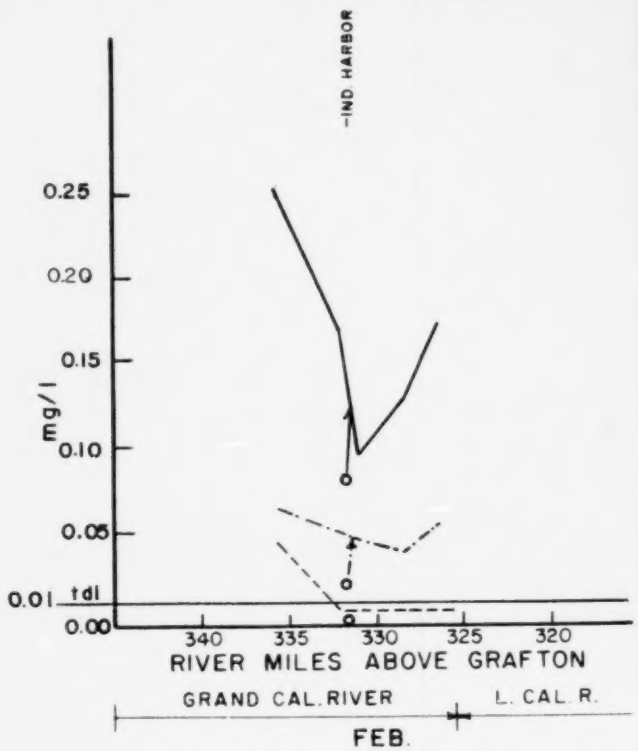
NO_2 & NO_3 NITROGEN AVERAGES
LOWER ILLINOIS RIVER SYSTEM

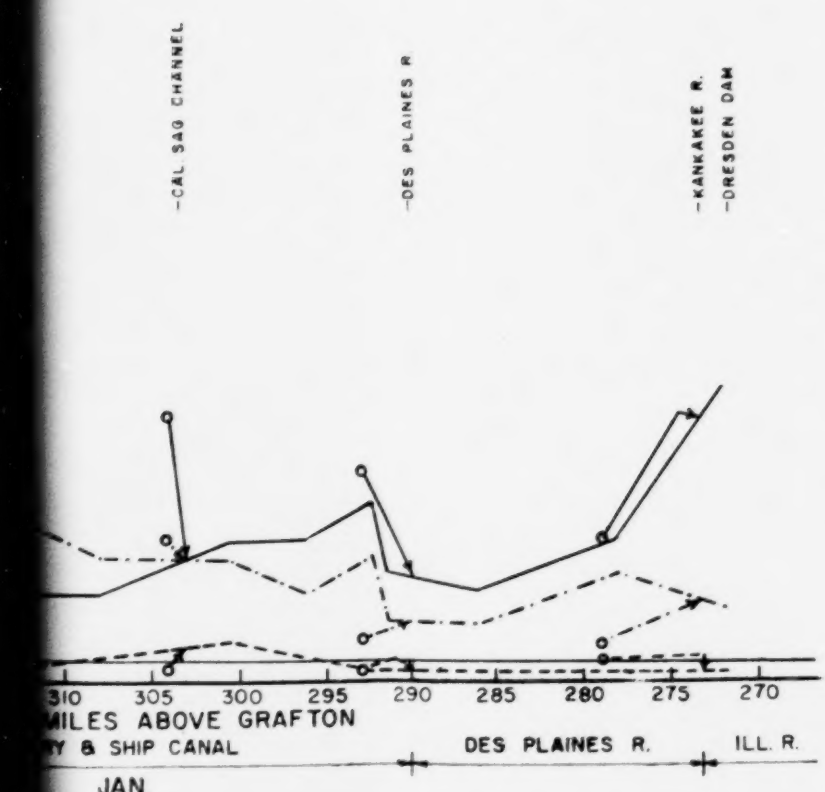
DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

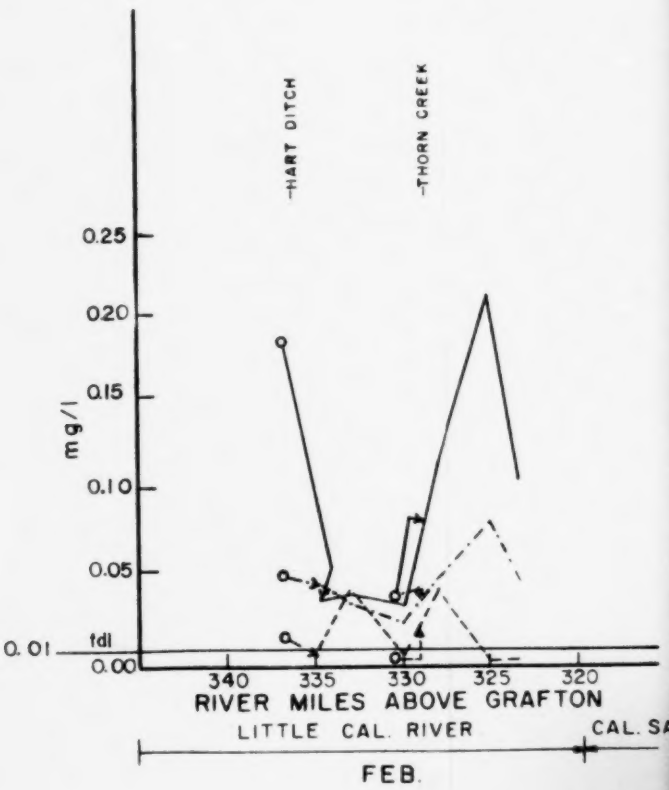
 FIGURE V-28

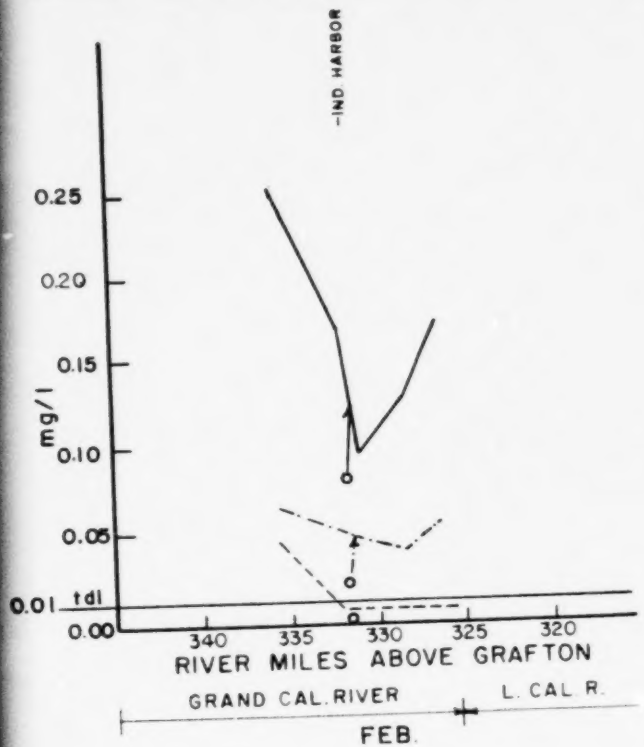

CAL HARBOR AT EWING
GRAND CAL R
CAL TREATMENT WORKS L CAL R
S & S CANAL
NAVY PIER & INLET S BR CHGO R
0.25
0.20
0.15
0.10
0.05
0.01
tdl
0.00
mg/l
335 330 325 320 315 310 305 300
RIVER MILES ABOVE GRAFTON
L MICH
CAL R
L CAL R
CAL SAG CHANNEL
S & S CANAL
JAN
330 325
RIVER MILES
CHGO R
L MICH
WILMETTE INLET
N SIDE TREATMENT WORKS
NO BRANCH CHGO R
CHGO R INLET
STICKNEY TRM'T WORKS
CAL SAG CHANNEL
DES PLAINES R
0.57
340 335 330 325 320 315 310 305 300 295 290 285 280
L MICH
N SHORE CH
N BR CHGO R
SO BR
SANITARY & SHIP CANAL
DES PLAINES
JAN


-S & S CANAL
NAVY PIER & INLET
-S BR. CHGO R.
0.25
0.20
0.15
mg/l
0.10
0.05
0.01 tdl
0.00
330 325 320 315 310
RIVER MILES ABOVE GRAFTON
L. MICH. CHGO. R. SOUTH BRANCH CHGO R
JAN.
305 300
S & S CANAL


-IND. HARBOR
0.25
0.20
0.15
mg/l
0.10
0.05
0.01 tdl
0.00
340 335 330 325 320
RIVER MILES ABOVE GRAFTON
GRAND CAL. RIVER
L. CAL. R.
FEB.


-CAL SAG CHANNEL
-DES PLAINES R
-KANKAKEE R.
-DRESDEN DAM
310 305 300 295 290 285 280 275 270
MILES ABOVE GRAFTON
Y & SHIP CANAL
DES PLAINES R.
ILL. R.
JAN.


-HART DITCH
-THORN CREEK
0.25
0.20
0.15
mg/l
0.10
0.05
0.01 tdl
0.00
340 335 330 325 320
RIVER MILES ABOVE GRAFTON
LITTLE CAL. RIVER
CAL. SAG
FEB.



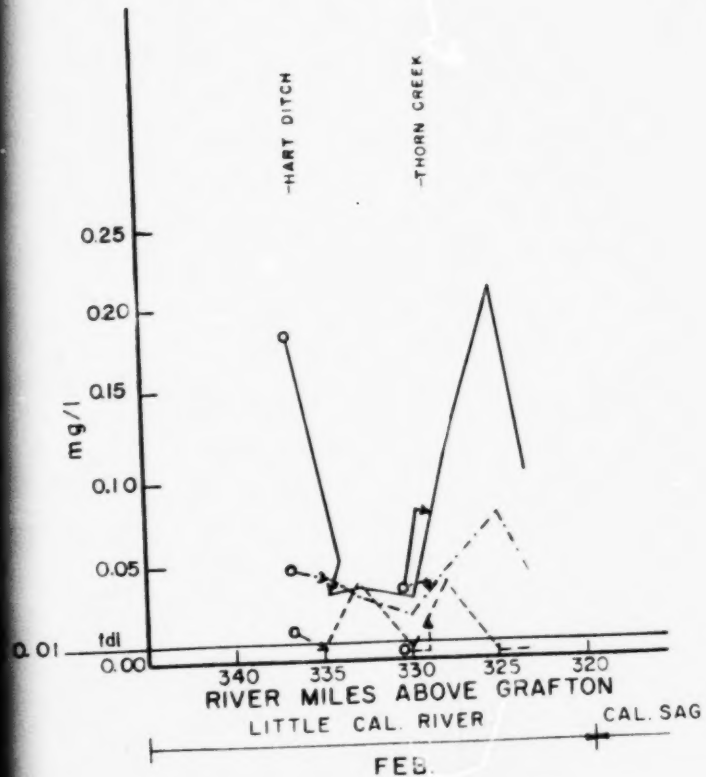
LEGEND

CU ——————

NI —·—·—·—·—

CD - - - - - - - - - - -

tdl Test Detection Limit

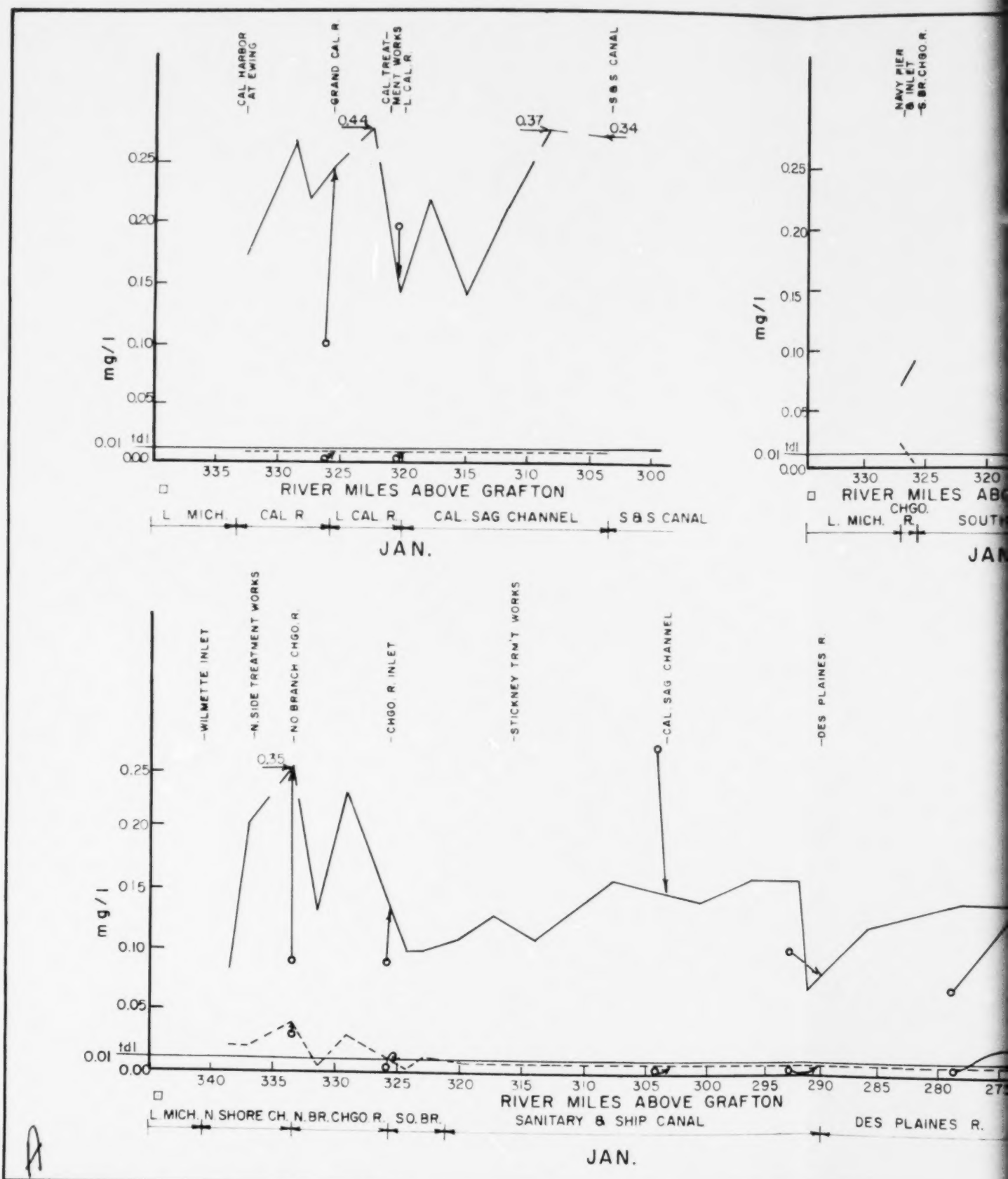


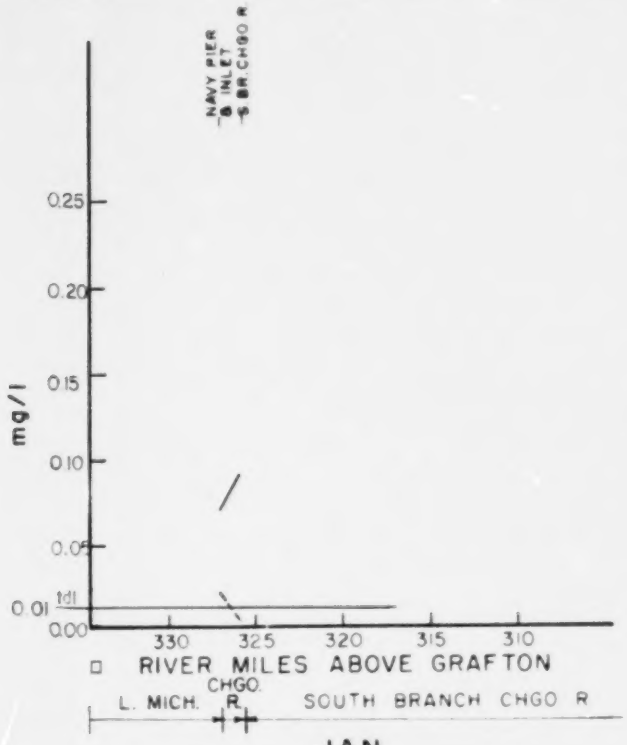
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

TOXIC METAL AVERAGES
JAN & FEB 1962
UPPER ILLINOIS RIVER SYSTEM

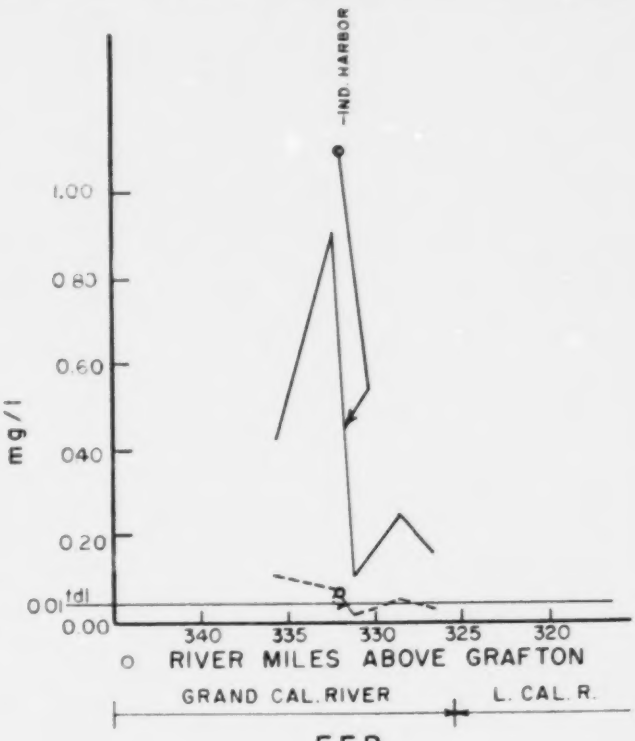
DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE V-29

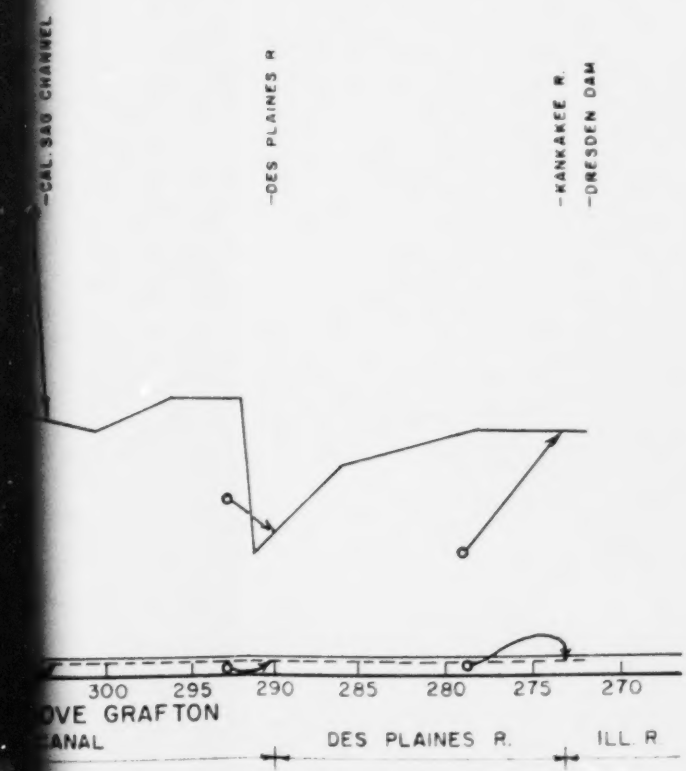

CAL HARBOR AT EWING
GRAND CAL R.
CAL. TREATMENT WORKS L CAL R.
S & S CANAL
0.44
0.37
0.34
mg/l
0.25
0.20
0.15
0.10
0.05
0.01 tdl
0.00
335 330 325 320 315 310 305 300
RIVER MILES ABOVE GRAFTON
L. MICH. CAL R. L CAL R. CAL. SAG CHANNEL S & S CANAL
JAN.
NAVY PIER & INLET
S. BR. CHGO R.
CHGO. R.
L. MICH.
SOUTH
JAN
WILMETTE INLET
N. SIDE TREATMENT WORKS
NO BRANCH CHGO R.
CHGO. R INLET
STICKNEY TRM'T WORKS
CAL. SAG CHANNEL
DES PLAINES R.
0.35
340 335 330 325 320 315 310 305 300 295 290 285 280
RIVER MILES ABOVE GRAFTON
L. MICH. N. SHORE CH. N. BR. CHGO R. SO. BR.
SANITARY & SHIP CANAL
DES PLAINES R.
JAN.

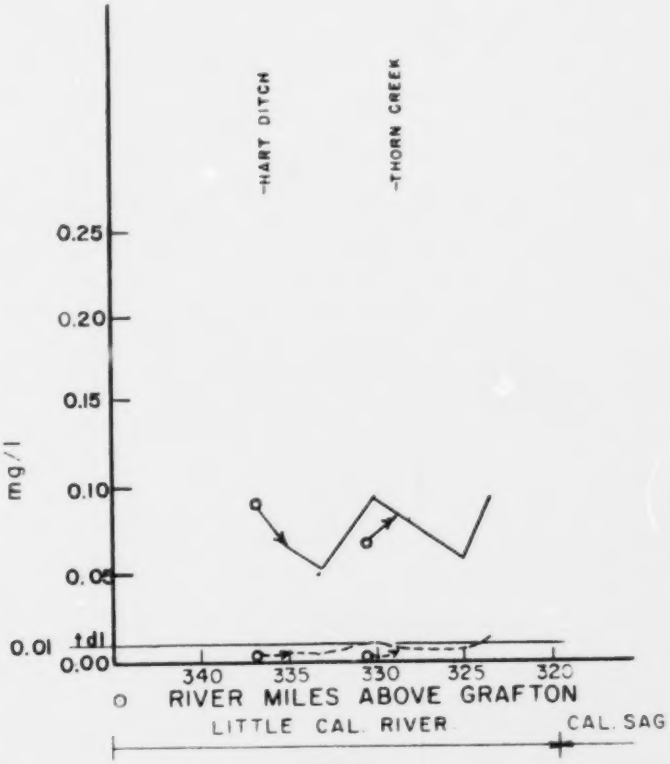

NAVY PIER
INLET
SBR CHGO R
0.25
0.20
0.15
0.10
0.05
0.01
tdl
0.00
mg/l
330
325
320
315
310
RIVER MILES ABOVE GRAFTON
CHGO.
L. MICH. R.
SOUTH BRANCH CHGO R

JAN.

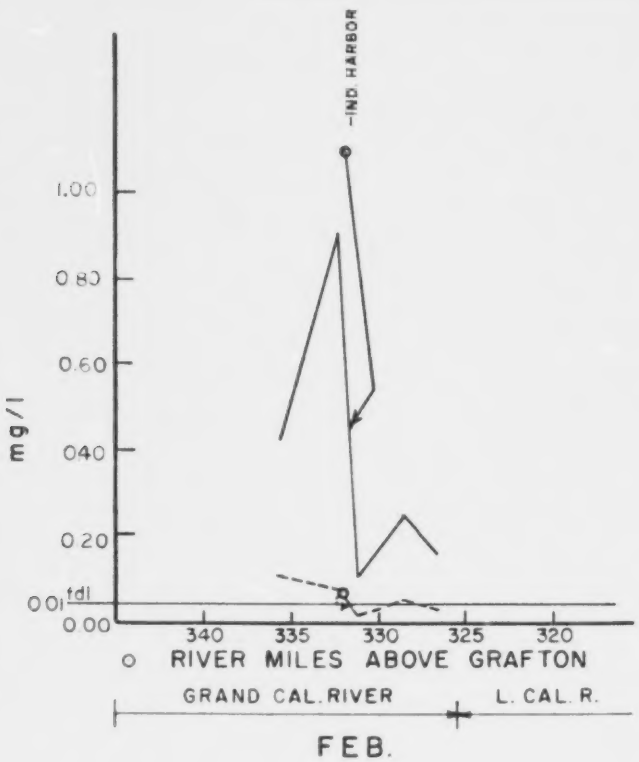

IND HARBOR
1.00
0.80
0.60
0.40
0.20
0.01
tdl
0.00
mg/l
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
GRAND CAL. RIVER
L. CAL. R.

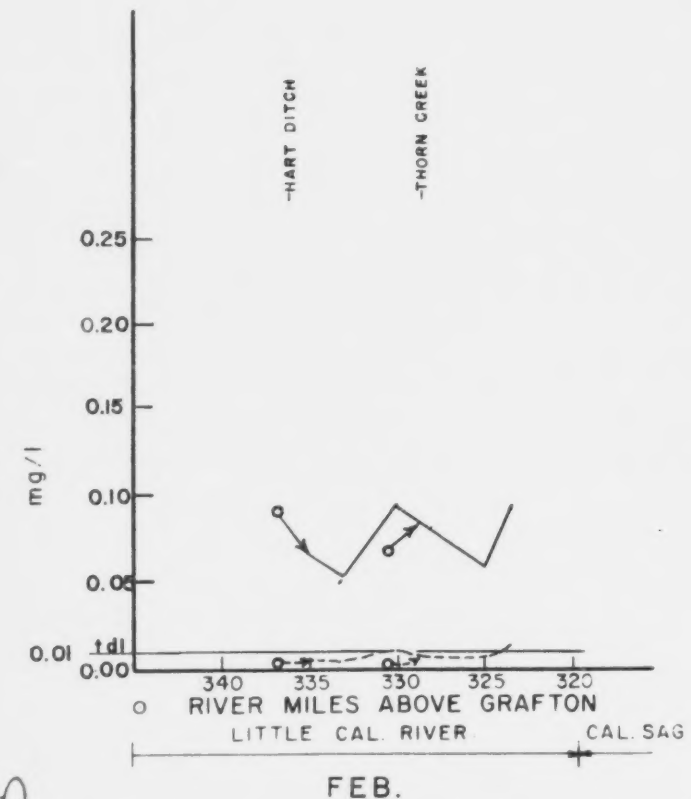
FEB.


CAL. SAG CHANNEL
DES PLAINES R
KANKAKEE R.
DRESDEN DAM
300
295
290
285
280
275
270
OVE GRAFTON
ANAL
DES PLAINES R.
ILL R


HART DITCH
THORN CREEK
0.25
0.20
0.15
0.10
0.05
0.01
tdl
0.00
mg/l
340
335
330
325
320
RIVER MILES ABOVE GRAFTON
LITTLE CAL. RIVER
CAL. SAG

FEB.





LEGEND

Zinc ———

Chromium - - - - - - - -

tdl – Test Detection Limit

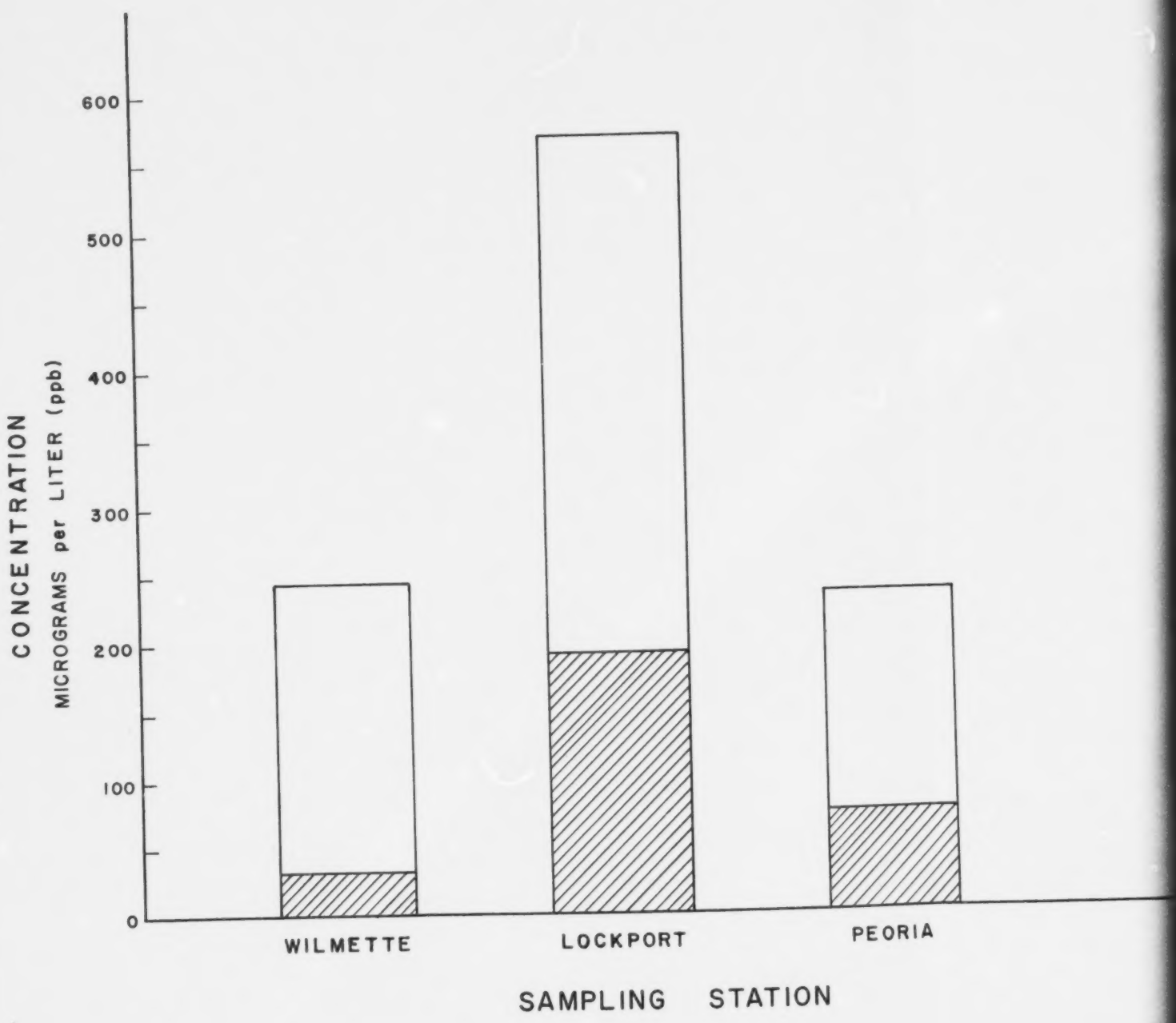
GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

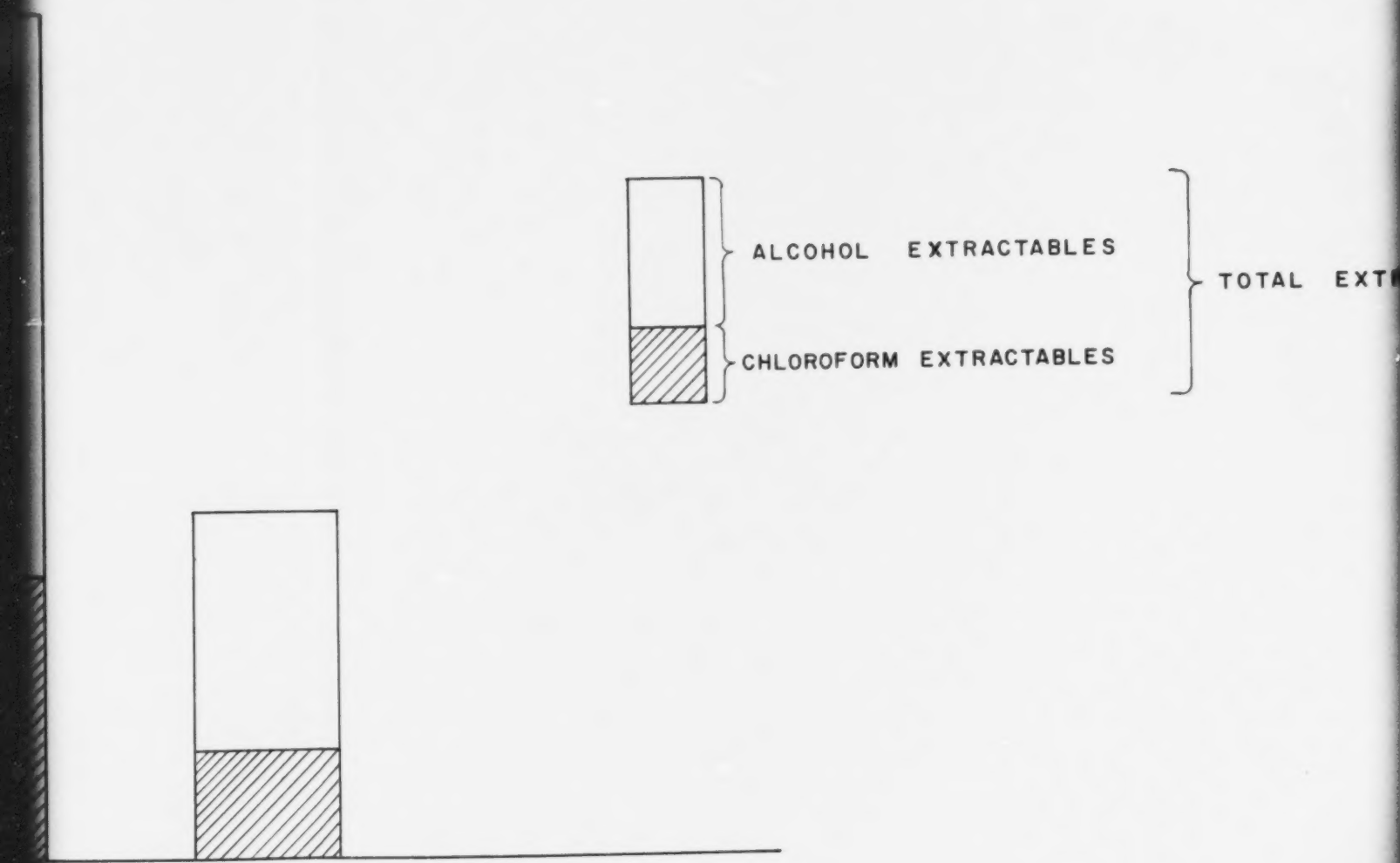
TOXIC METAL AVERAGES JAN. & FEB. 1962

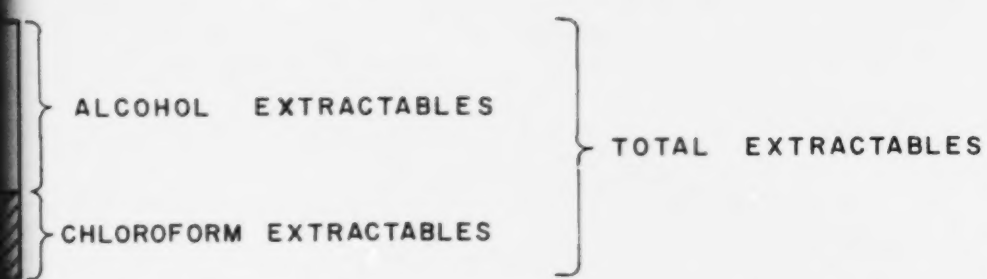
UPPER ILLINOIS RIVER SYSTEM

DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE V– 30


CONCENTRATION
MICROGRAMS per LITER (ppb)
600
500
400
300
200
100
0
WILMETTE
LOCKPORT
PEORIA
SAMPLING STATION


ALCOHOL EXTRACTABLES
CHLOROFORM EXTRACTABLES
TOTAL EXTR
PEORIA
STATION

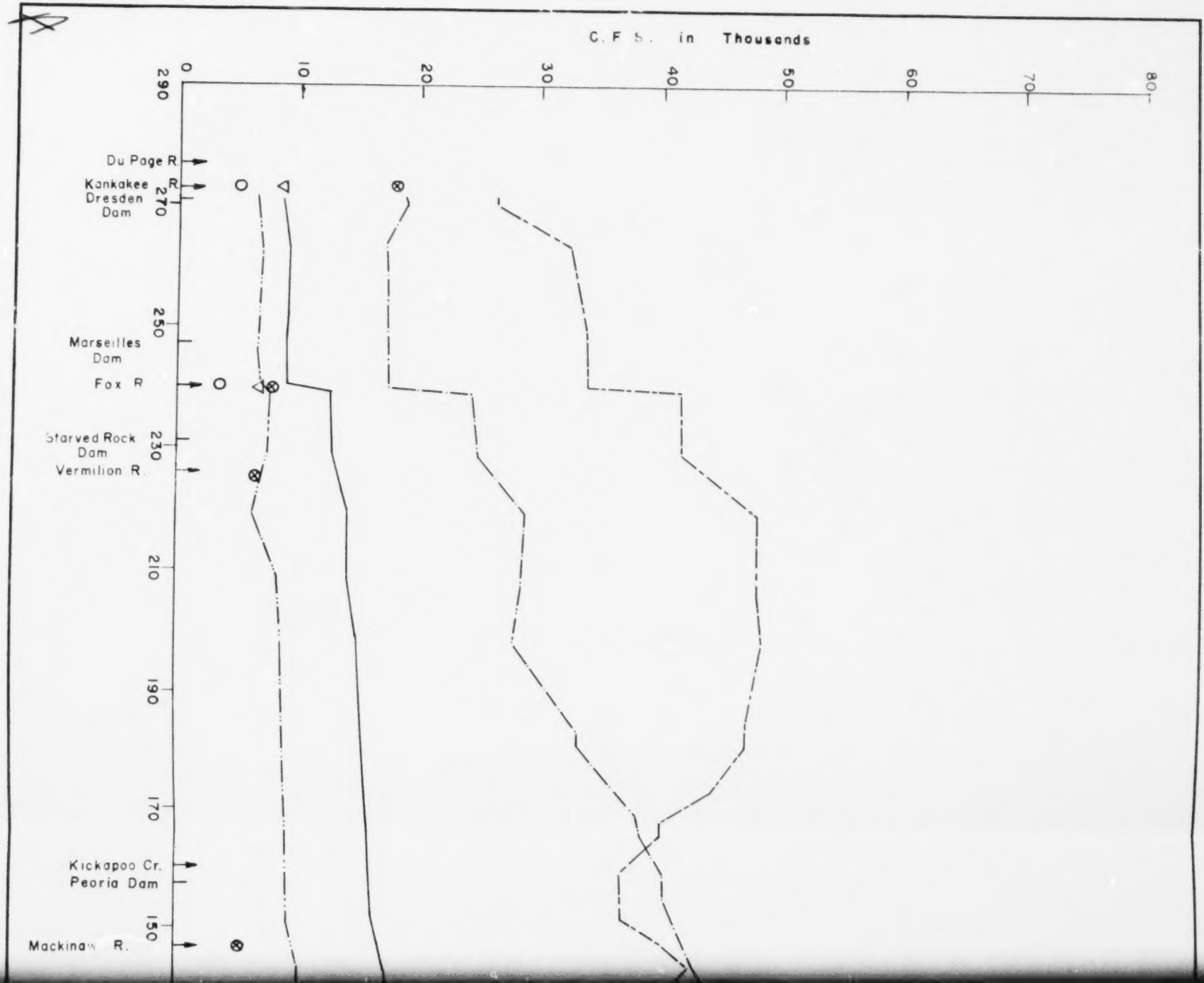


GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

ORGANIC EXTRACTABLES

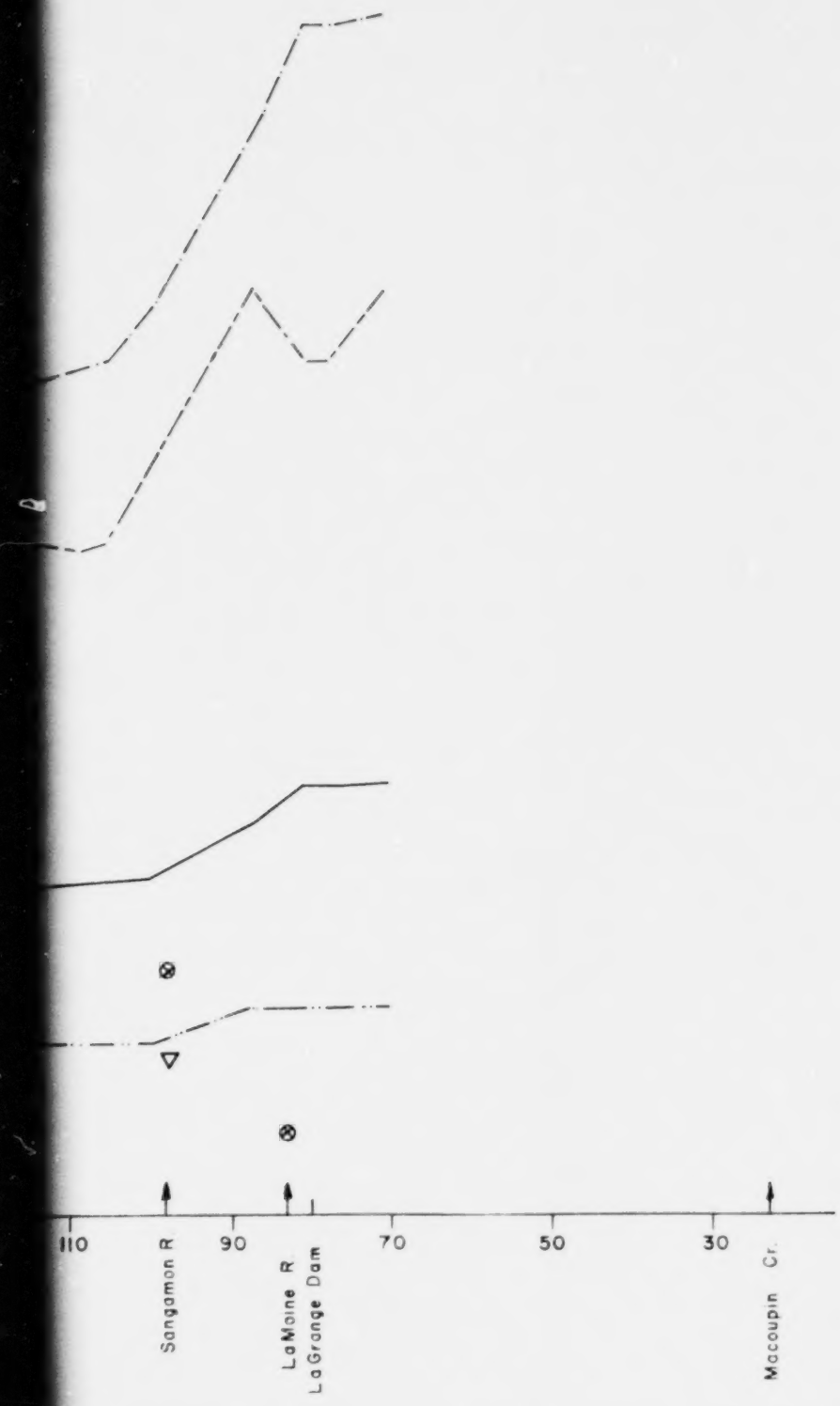
DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE V-31


C. F. S. in Thousands
0
10
20
30
40
50
60
70
80
290
270
250
230
210
190
170
150
Du Page R.
Kankakee R.
Dresden Dam
Marseilles Dam
Fox R.
Starved Rock Dam
Vermilion R.
Kickapoo Cr.
Peoria Dam
Mackinaw R.

190
170
150
130
110
90
70
50
30
Kickapoo Cr.
Peoria Dam
Mackinaw R
Spoon R
Sangamon R
LaMoine R
LaGrange Dam
Macoupin Cr.

B



GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

C. F. S. AVERAGES

LOWER ILLINOIS RIVER SYSTEM

DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

 FIGURE V-32

LEGEND

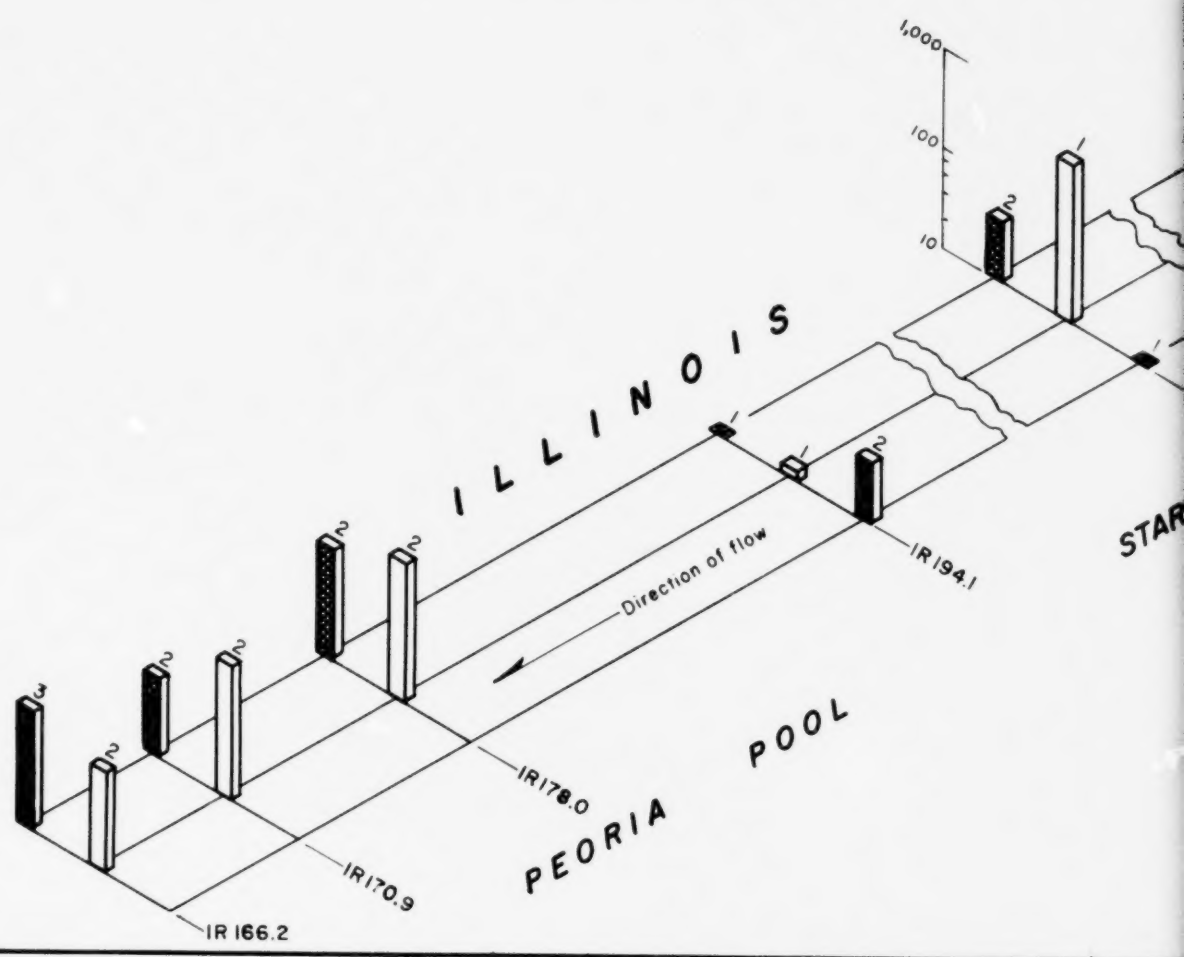
MEAN N

SUMMER

FALL

WINTER

INDICATES NUMBER OF GENERA OF ORGANISMS

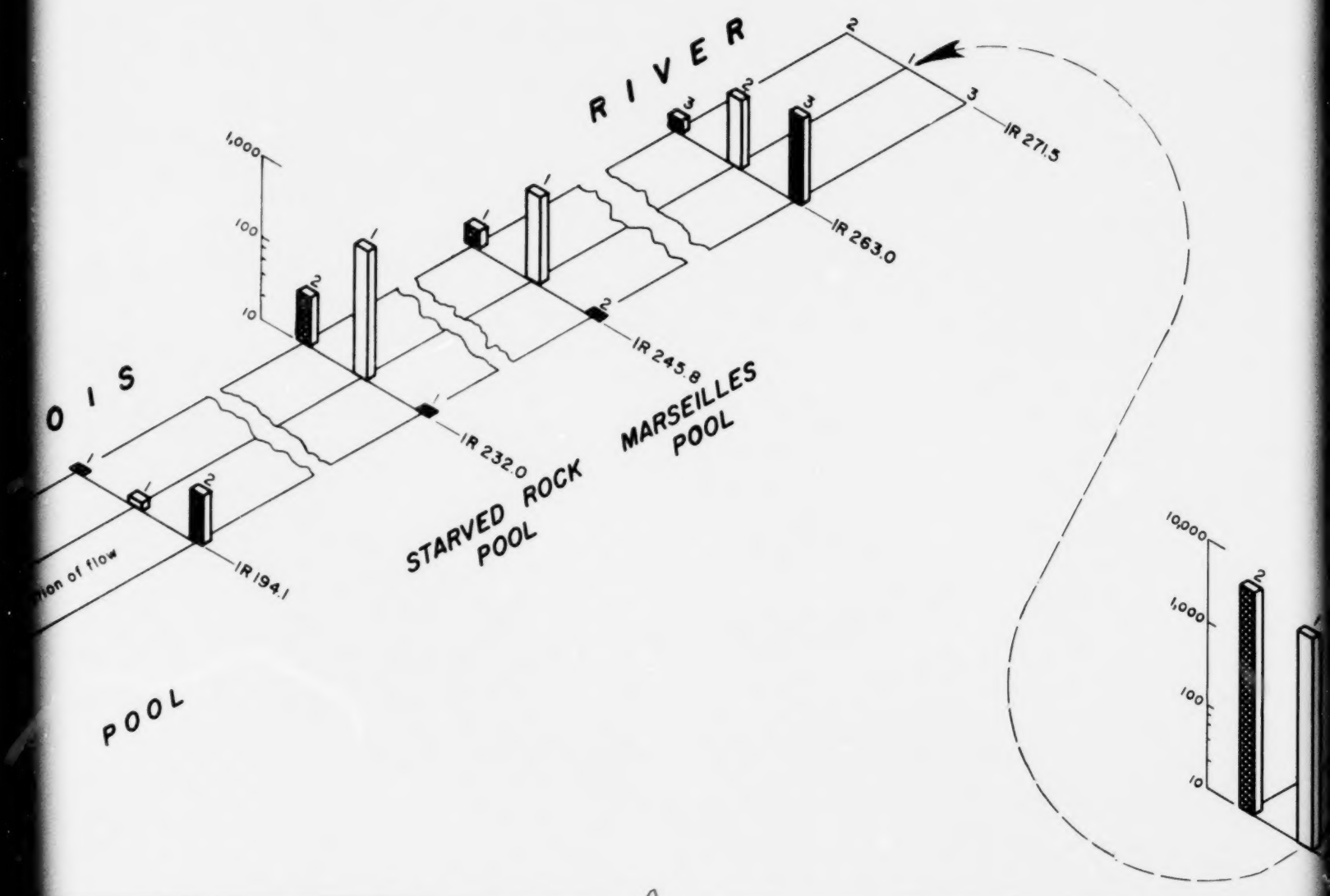


MEAN NUMBERS OF BENTHIC ORGANISMS PER SQ. F

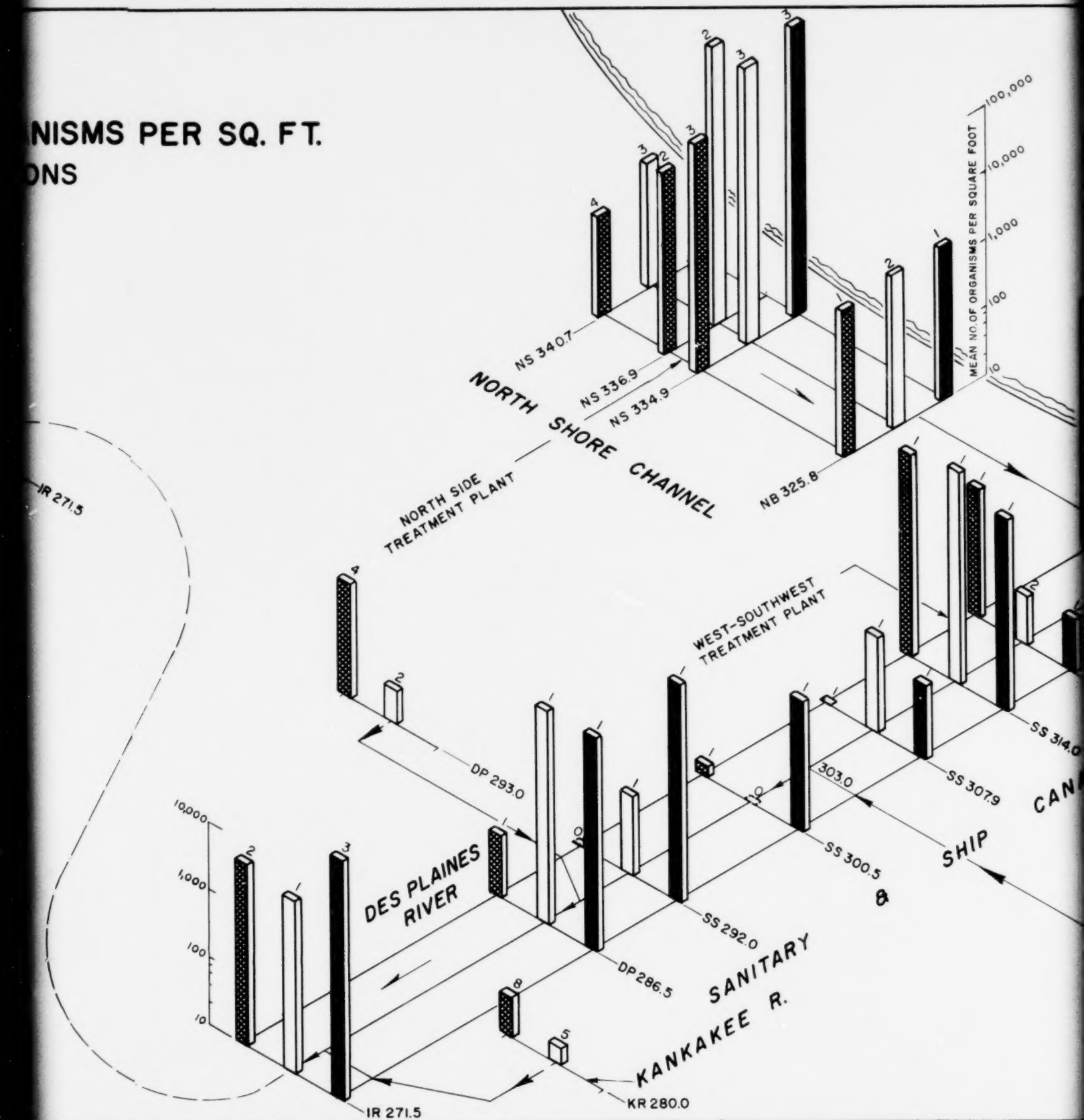
SEASONAL COMPARISONS

JULY 1961—FEB. 1962

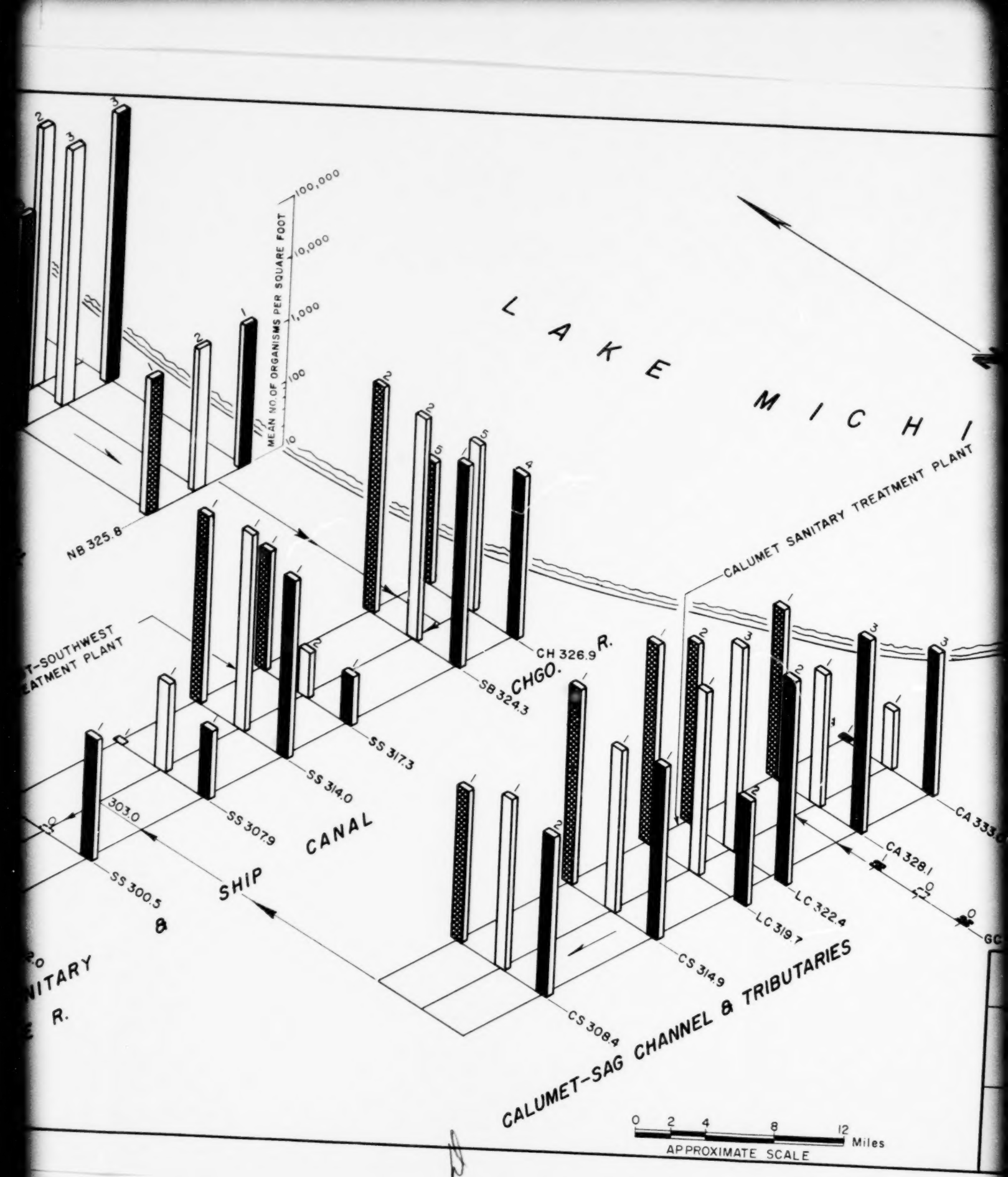
GENERA OF ORGANISMS

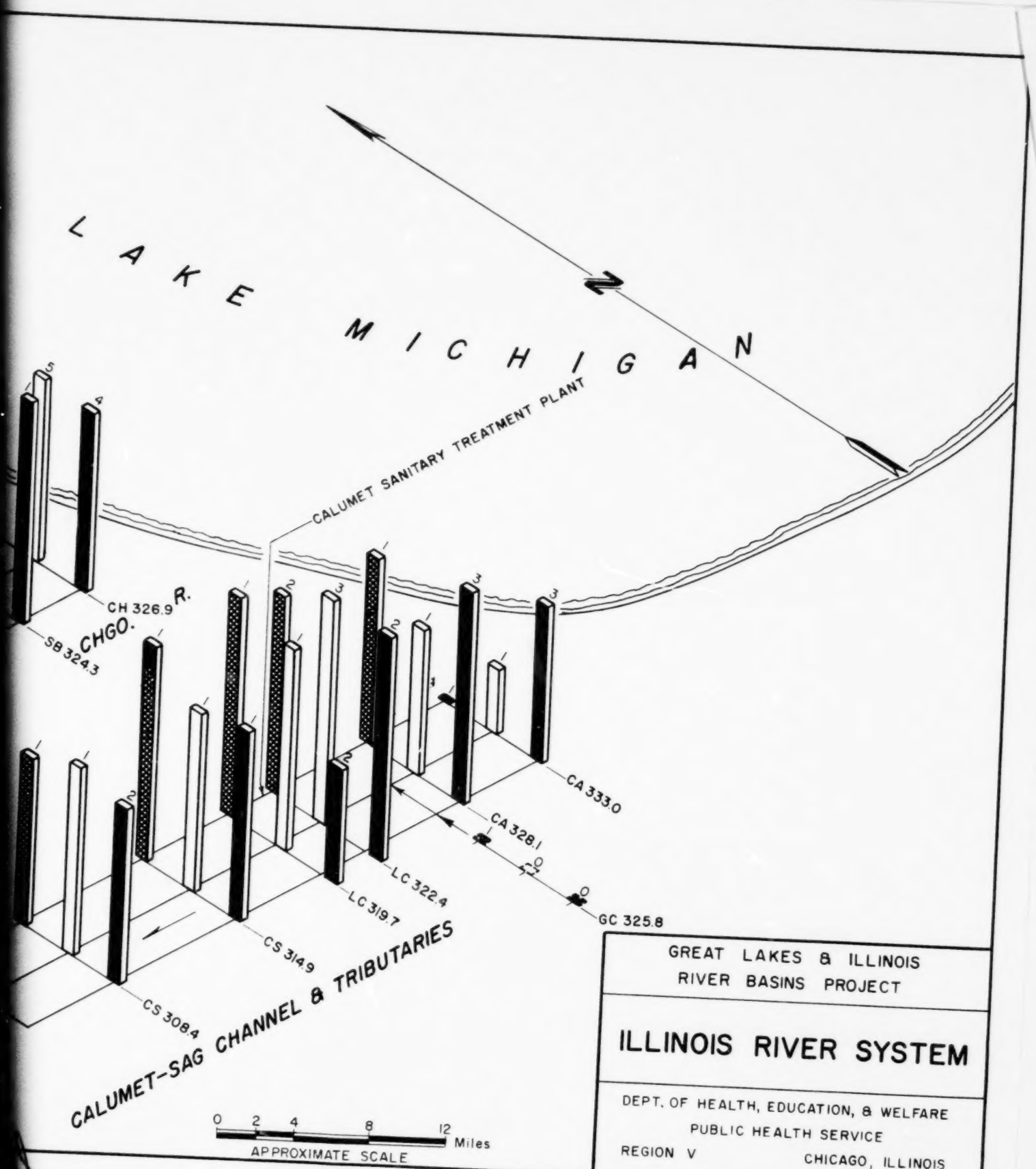


NISMS PER SQ. FT.
ONS



C


MEAN NO. OF ORGANISMS PER SQUARE FOOT
100,000
10,000
1,000
100
10
LAKE MICHI
CALUMET SANITARY TREATMENT PLANT
NB 325.8
CH 326.9
R.
CHGO.
SB 324.3
SS 317.3
SS 314.0
SS 307.9
303.0
SS 300.5
CANAL
SHIP
&
CA 333.0
CA 328.1
LC 322.4
LC 319.7
CS 314.9
CS 308.4
CALUMET-SAG CHANNEL & TRIBUTARIES
0 2 4 8 12 Miles
APPROXIMATE SCALE

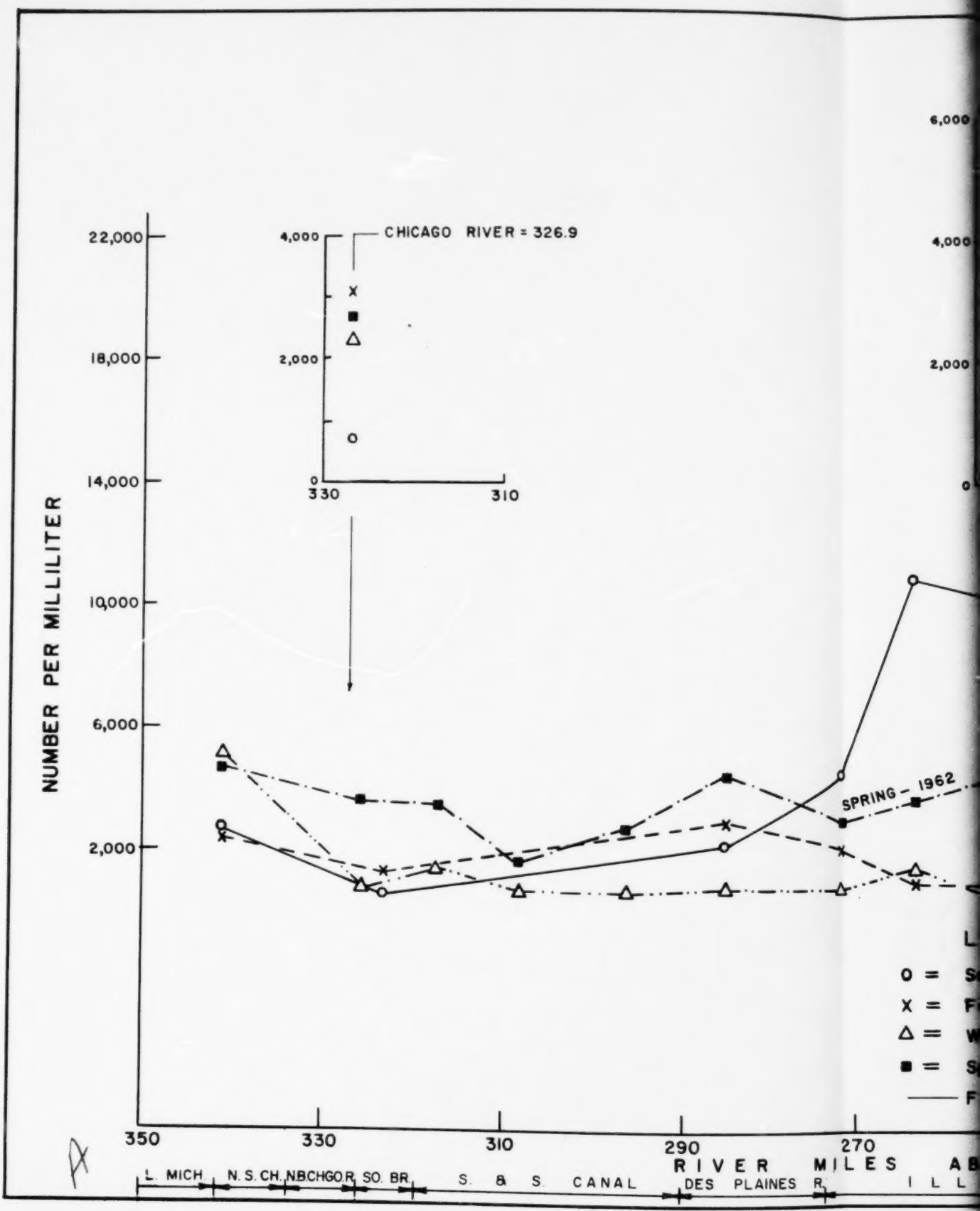


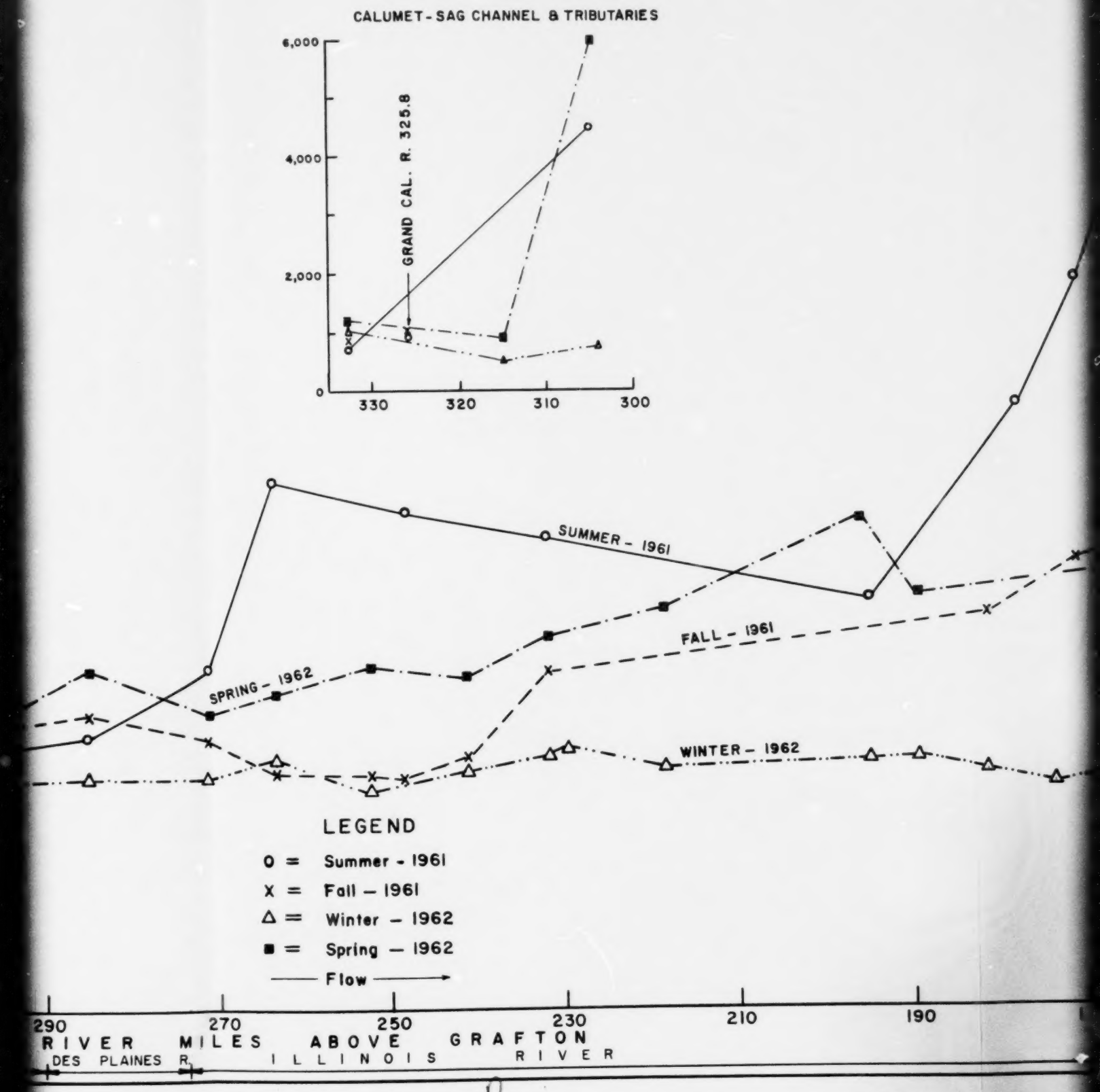
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

ILLINOIS RIVER SYSTEM

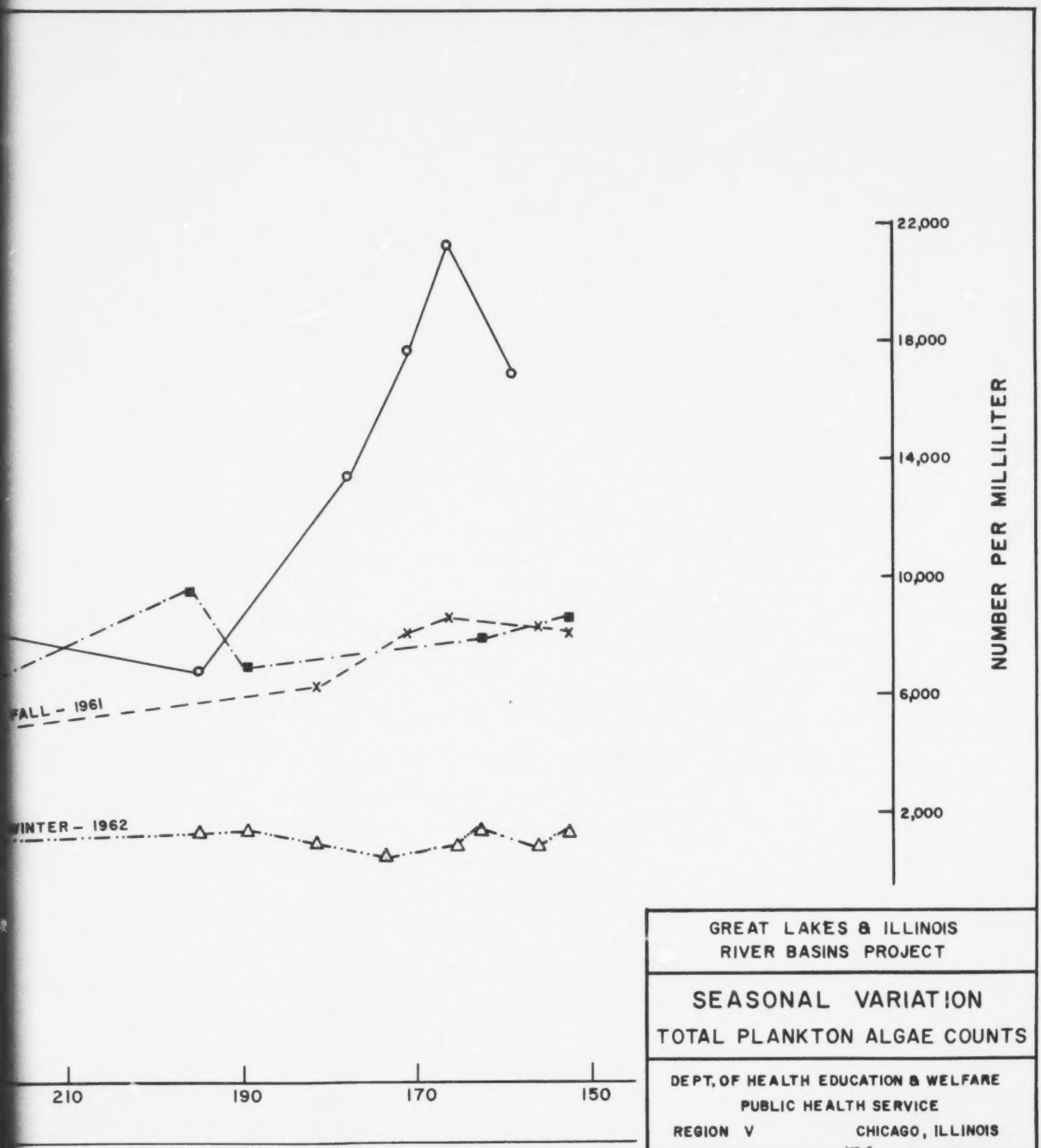
DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE VI-1


NUMBER PER MILLILITER
22,000
18,000
14,000
10,000
6,000
2,000
4,000
2,000
0
CHICAGO RIVER = 326.9
330
310
SPRING - 1962
350
330
310
290
270
RIVER MILES
L. MICH
N.S.CH.
N.BCHGO R.
SO. BR.
S. & S. CANAL
DES PLAINES R.
ILL


CALUMET-SAG CHANNEL & TRIBUTARIES
6,000
4,000
2,000
0
GRAND CAL. R. 325.8
330
320
310
300
SUMMER - 1961
FALL - 1961
SPRING - 1962
WINTER - 1962
LEGEND
O = Summer - 1961
X = Fall - 1961
Δ = Winter - 1962
■ = Spring - 1962
Flow
290
270
250
230
210
190
RIVER MILES ABOVE GRAFTON
DES PLAINES R.
ILLINOIS RIVER

B

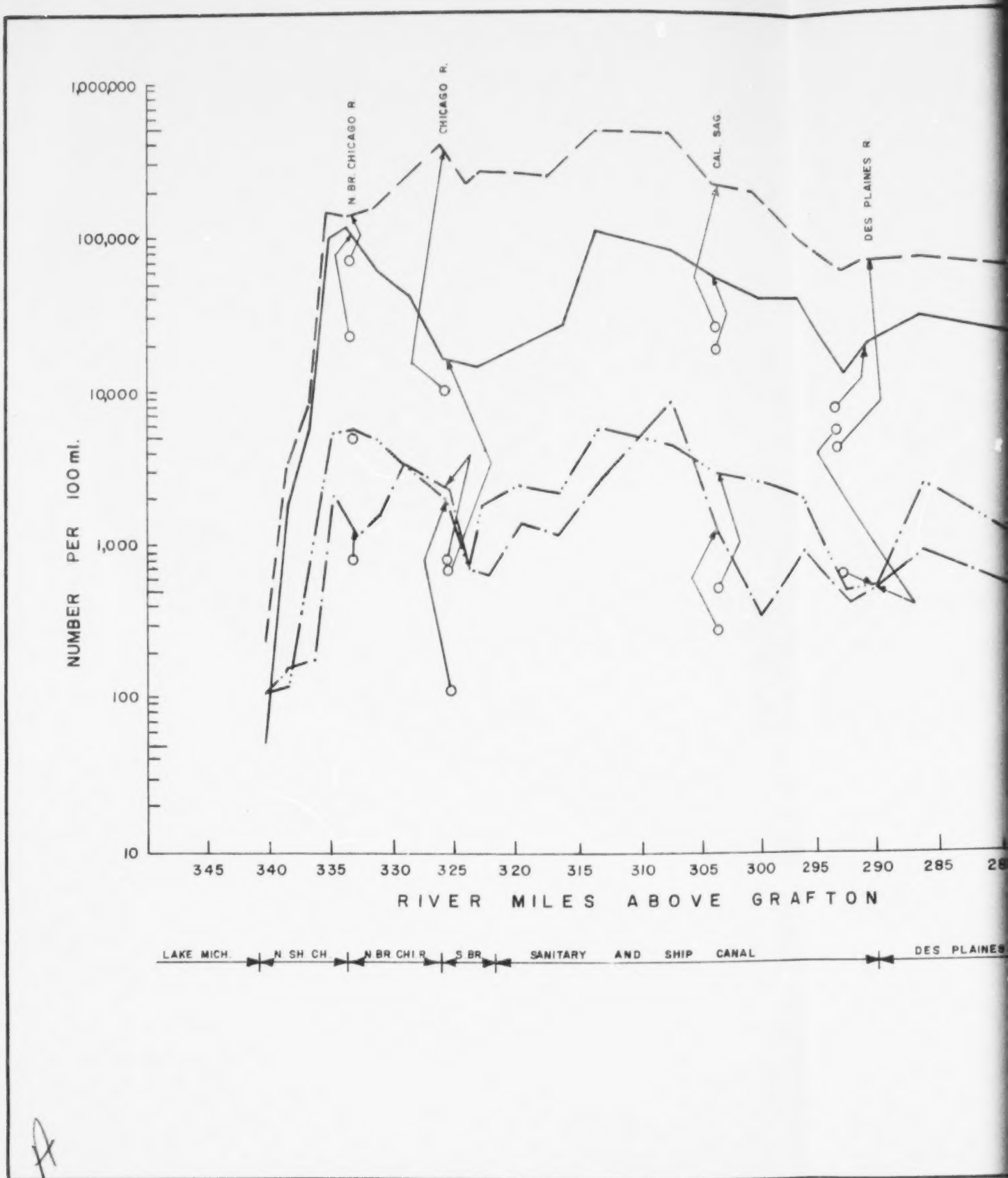


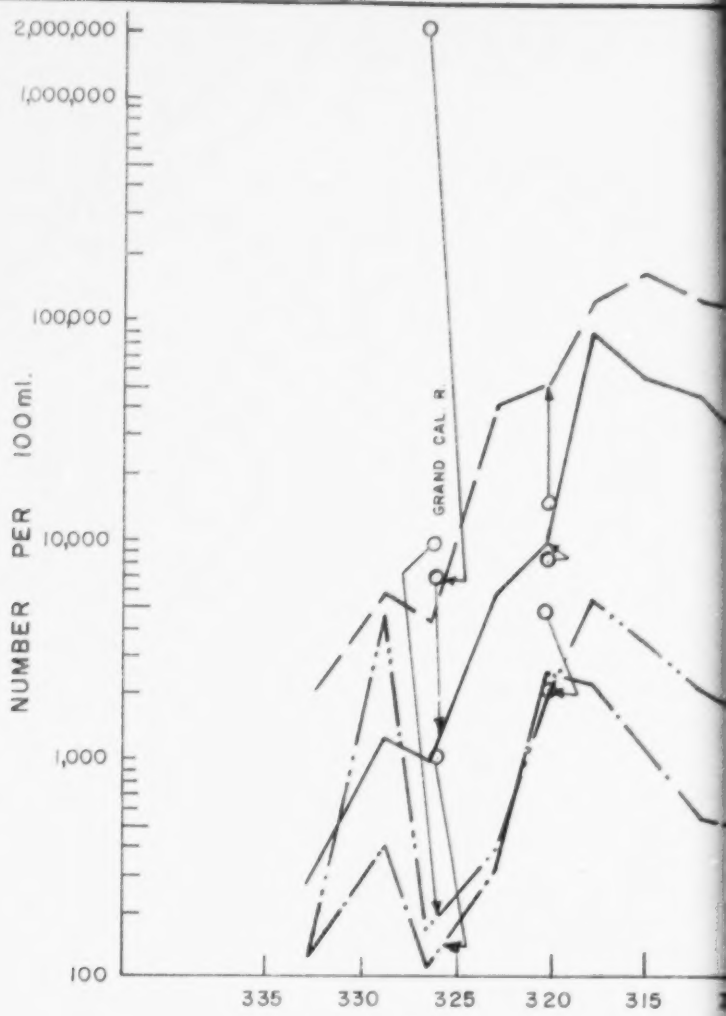
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

SEASONAL VARIATION
TOTAL PLANKTON ALGAE COUNTS

DEPT. OF HEALTH EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

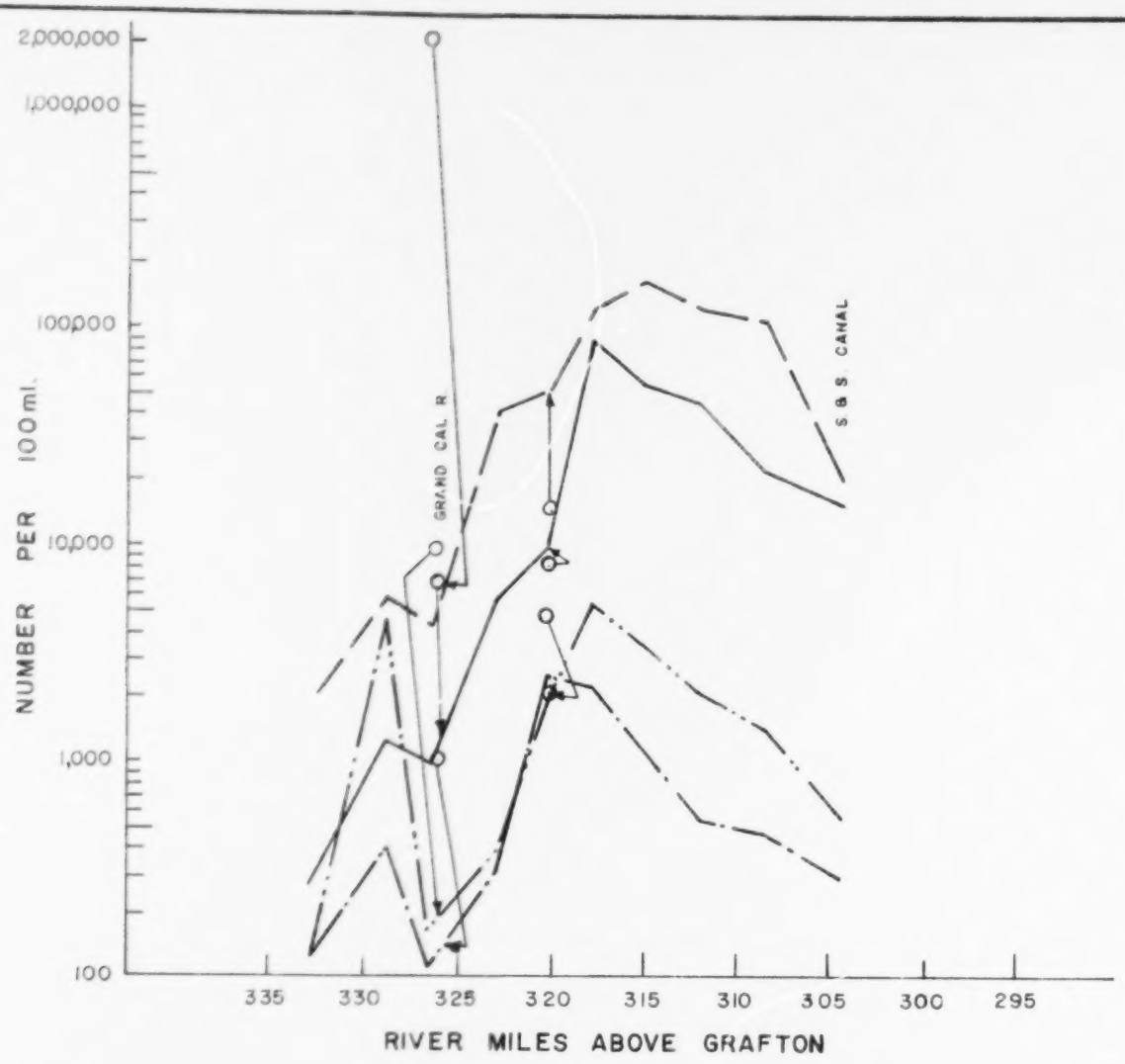
FIGURE VI-2


1,000,000
100,000
10,000
1,000
100
10
NUMBER PER 100 ml.
N. BR. CHICAGO R.
CHICAGO R.
CAL. SAG.
DES PLAINES R.
345
340
335
330
325
320
315
310
305
300
295
290
285
RIVER MILES ABOVE GRAFTON
LAKE MICH.
N. SH. CH.
N. BR. CHI R.
S. BR.
SANITARY AND SHIP CANAL
DES PLAINES



LEGEND

- Coliform – Summer Months, 4 Months Avg.
- Fecal Streptococci – Summer Months Avg.
- Coliform – Winter Months Avg.
- Fecal Streptococci – Summer Months Avg.



LEGEND

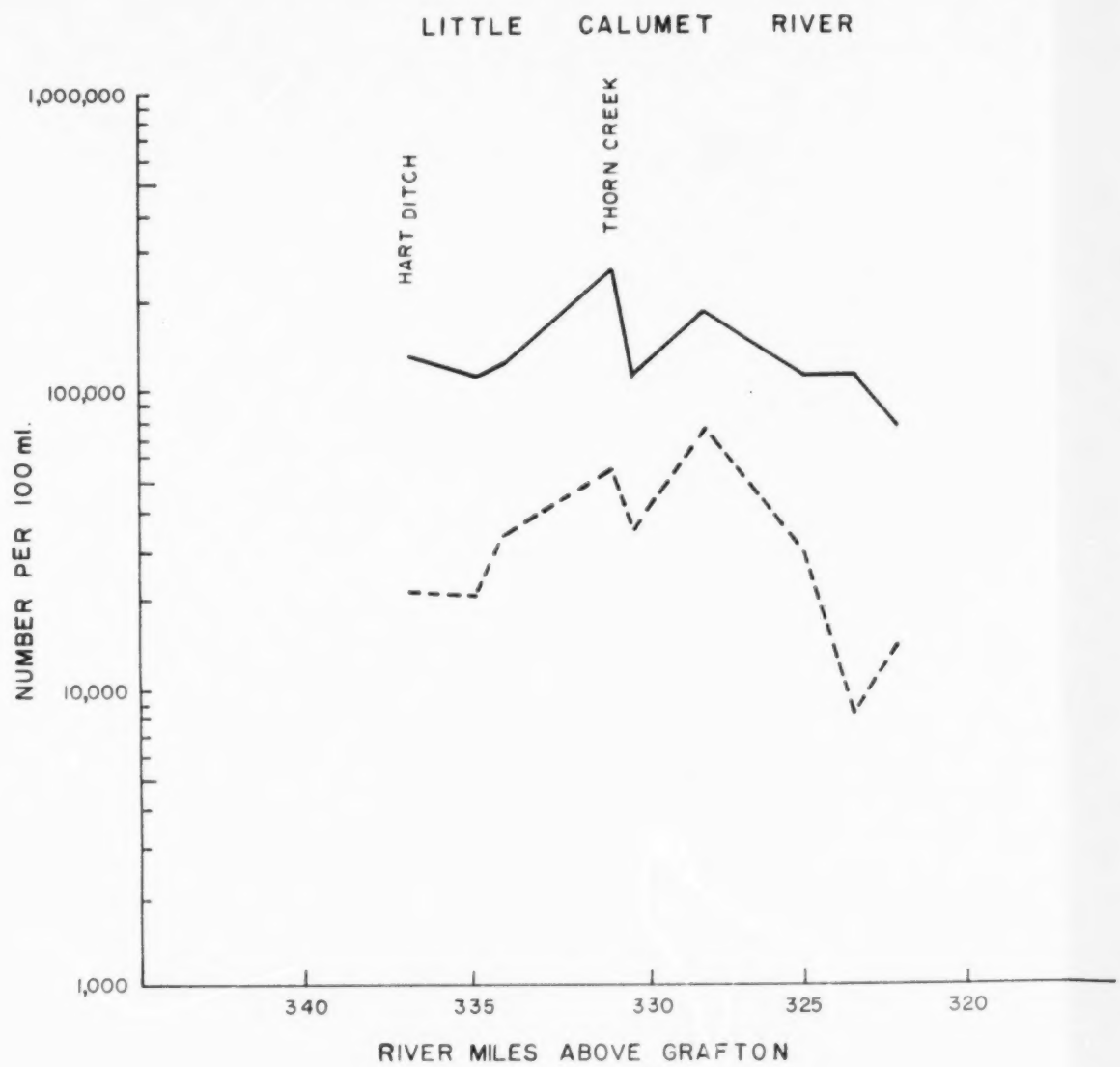
- Coliform - Summer Months, 4 Months Avg.
- Fecal Streptococci - Summer Months Avg.
- Coliform - Winter Months Avg.
- Fecal Streptococci - Summer Months Avg.

GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

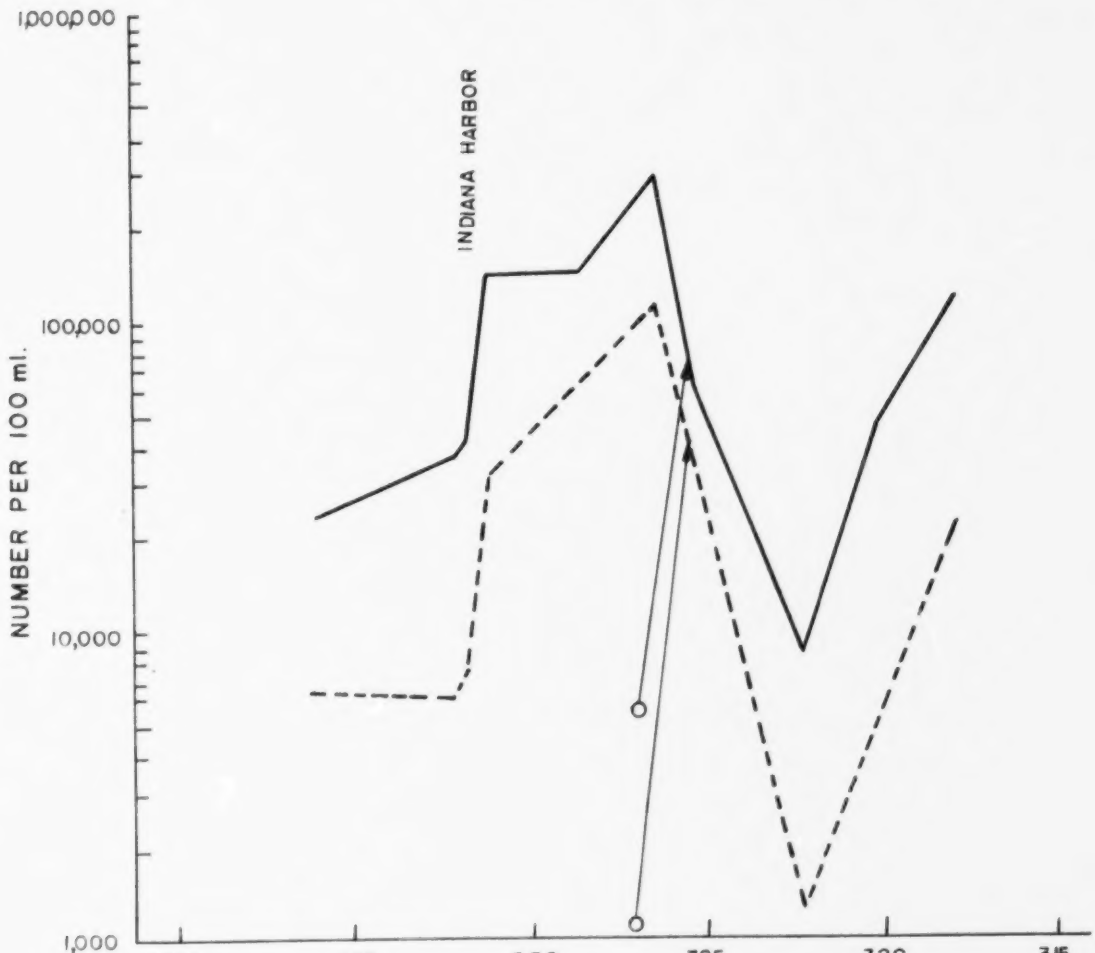
COLIFORM & FECAL STREPTOCOCCUS DENSITIES - GEOMETRIC MEANS UPPER ILLINOIS RIVER SYSTEM

DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE VII-1


LITTLE CALUMET RIVER
HART DITCH
THORN CREEK
1,000,000
100,000
10,000
1,000
NUMBER PER 100 ml.
340
335
330
325
320
RIVER MILES ABOVE GRAFTON

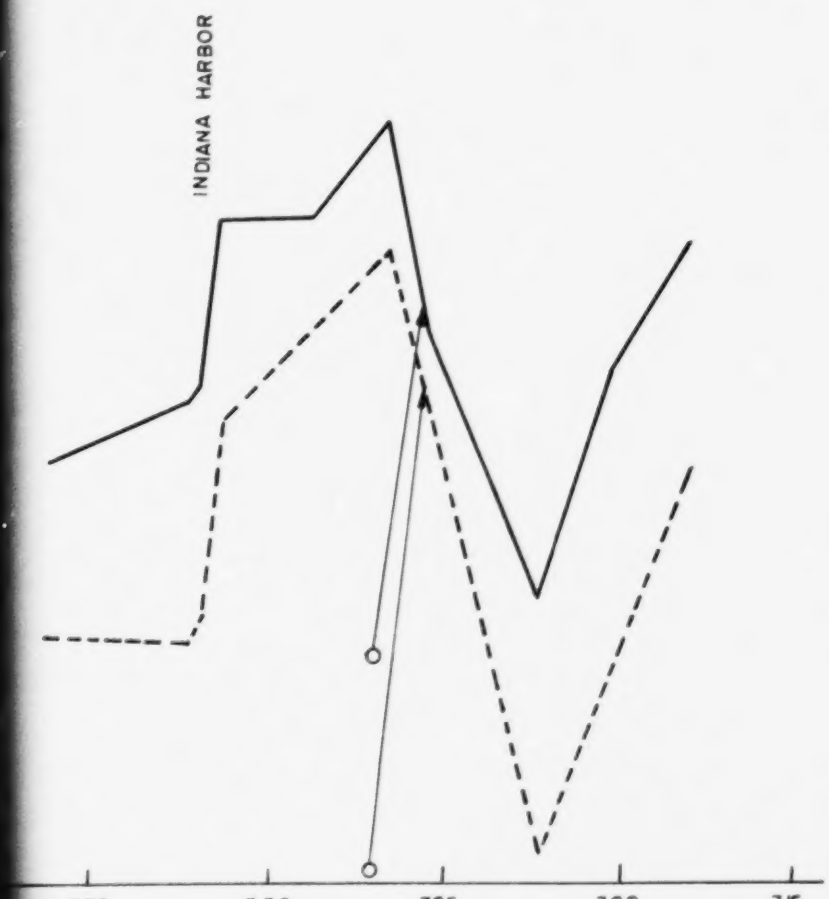
GRAND CALUMET RIVER



320

GRAND CALUMET RIVER | LITTLE CAL | CAL SAG

GRAND CALUMET RIVER



LEGEND

Feb. Coliform

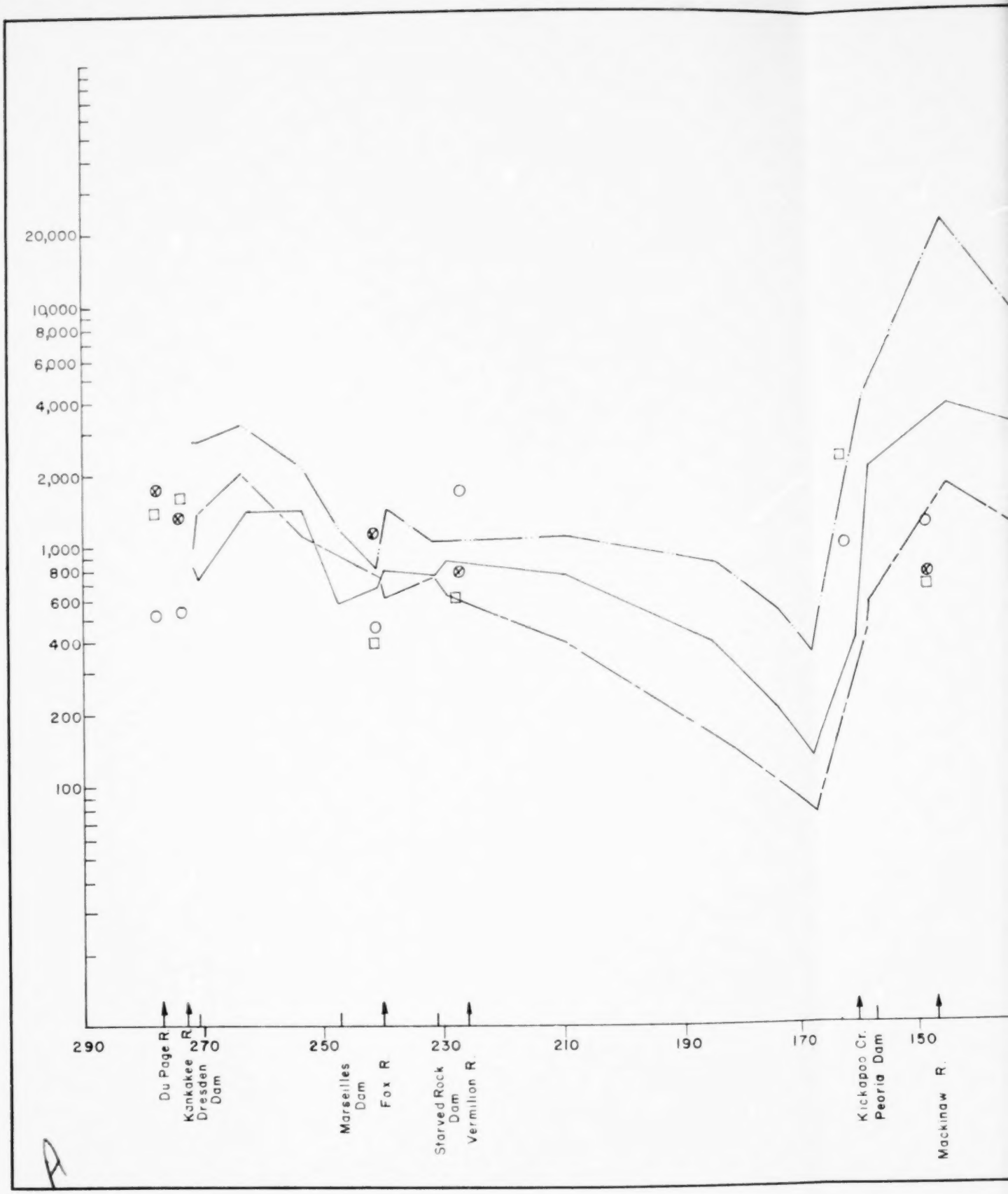
Feb. Fecal Streptococci

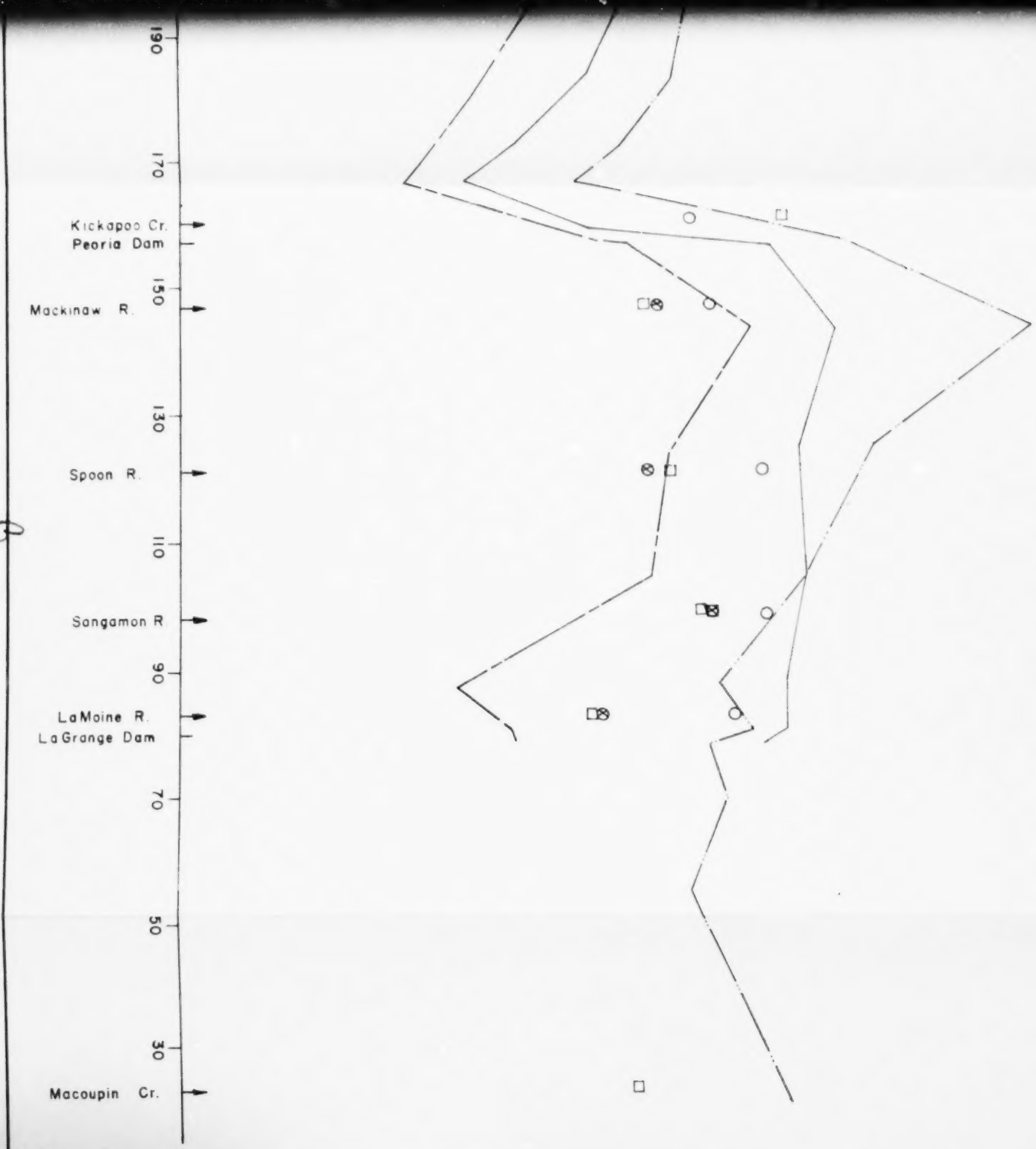
GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

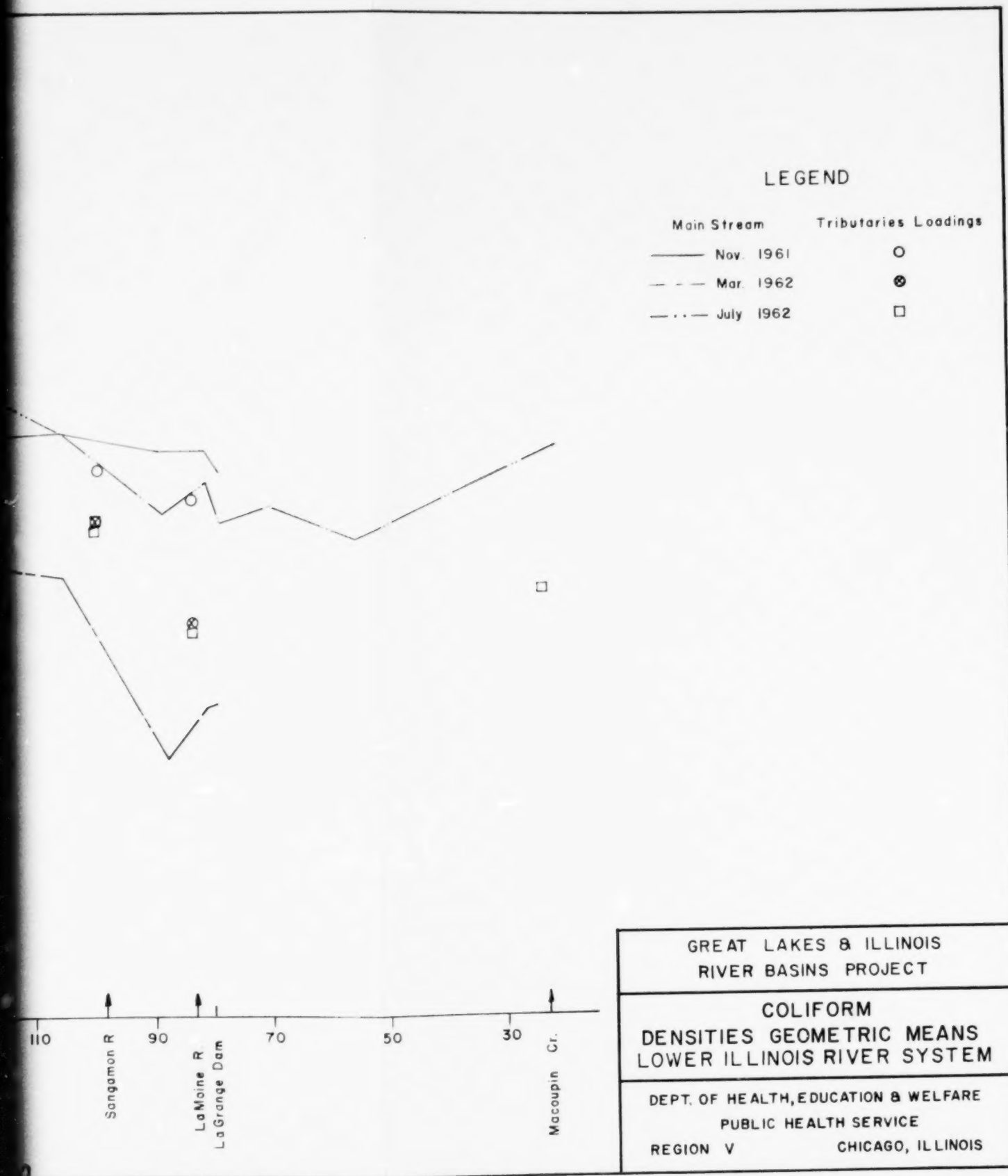
COLIFORM & FECAL STREPTOCOCCUS DENSITIES – GEOMETRIC MEANS CALUMET DRAINAGE BASIN

DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE VII-2


20,000
10,000
8,000
6,000
4,000
2,000
1,000
800
600
400
200
100
290
270
250
230
210
190
170
150
Du Page R.
Kankakee R.
Dresden Dam
Marseilles Dam
Fox R.
Starved Rock Dam
Vermilion R.
Kickapoo Cr.
Peoria Dam
Mackinaw R.


190
170
Kickapoo Cr.
Peoria Dam
150
Mackinaw R.
130
Spoon R.
110
Sangamon R
90
LaMoine R.
LaGrange Dam
70
50
30
Macoupin Cr.



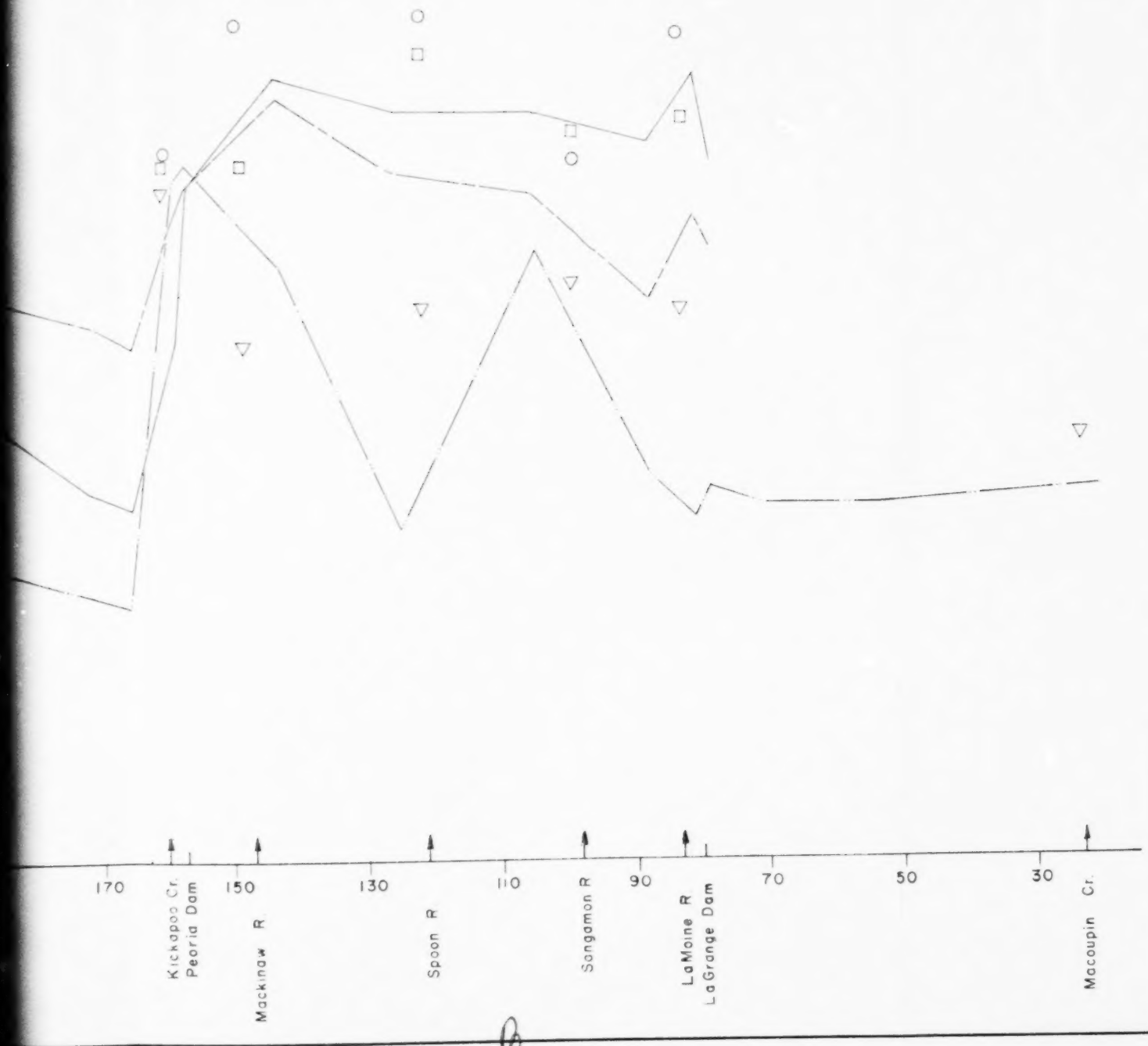
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

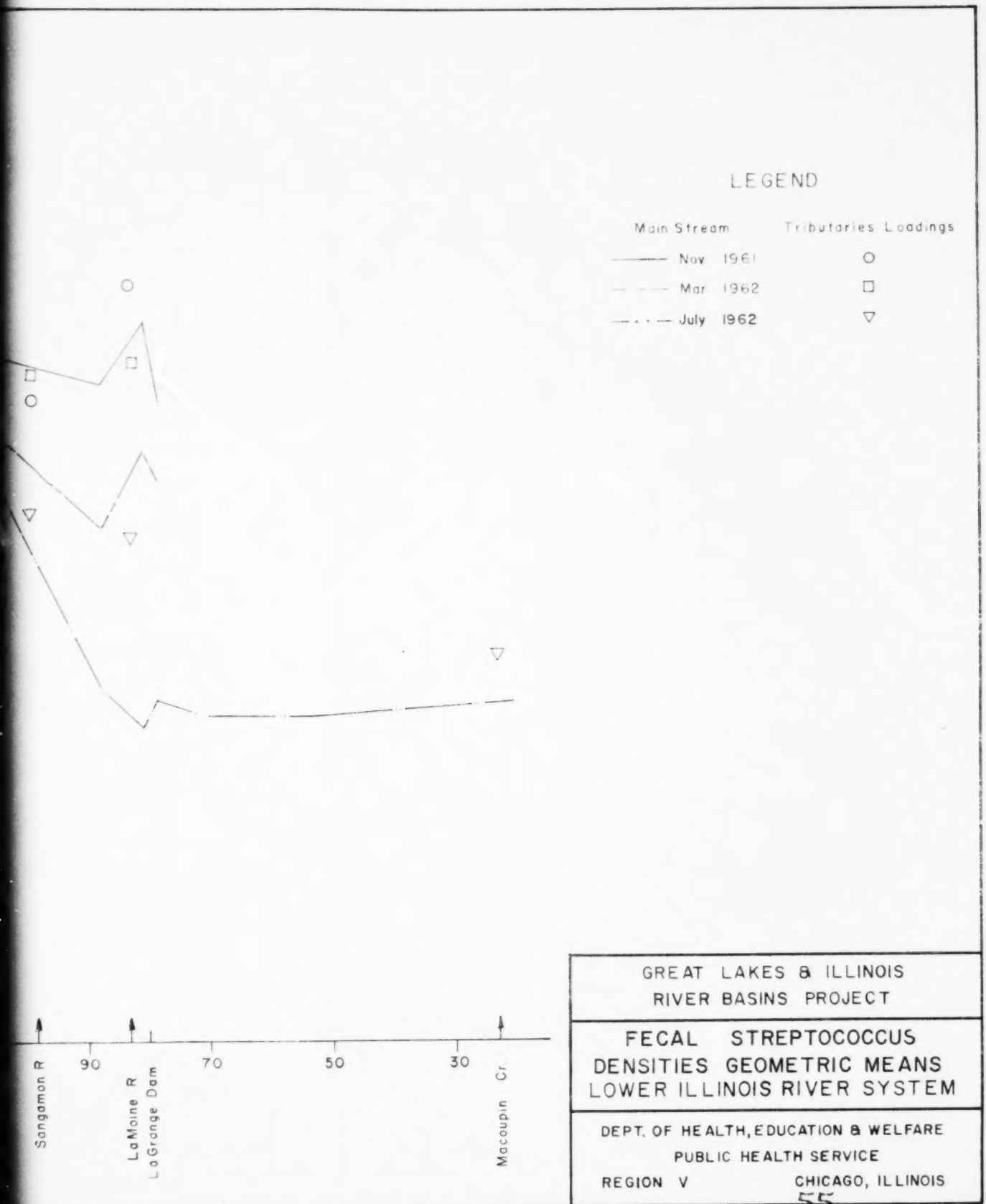
COLIFORM
DENSITIES GEOMETRIC MEANS
LOWER ILLINOIS RIVER SYSTEM

DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

 FIGURE VII-3

20,000
10,000
8,000
6,000
4,000
2,000
1,000
800
600
400
200
100
290
270
250
230
210
190
170
150
Du Page R.
Kankakee R.
Dresden Dam
Marseilles Dam
Fox R.
Starved Rock Dam
Vermilion R.
Kickapoo Cr.
Peoria Dam
Mackinaw R.


170
Kickapoo Cr.
Peoria Dam
150
Mackinaw R
130
Spoon R
110
Sangamon R
90
LaMoine R
LaGrange Dam
70
50
30
Macoupin Cr.

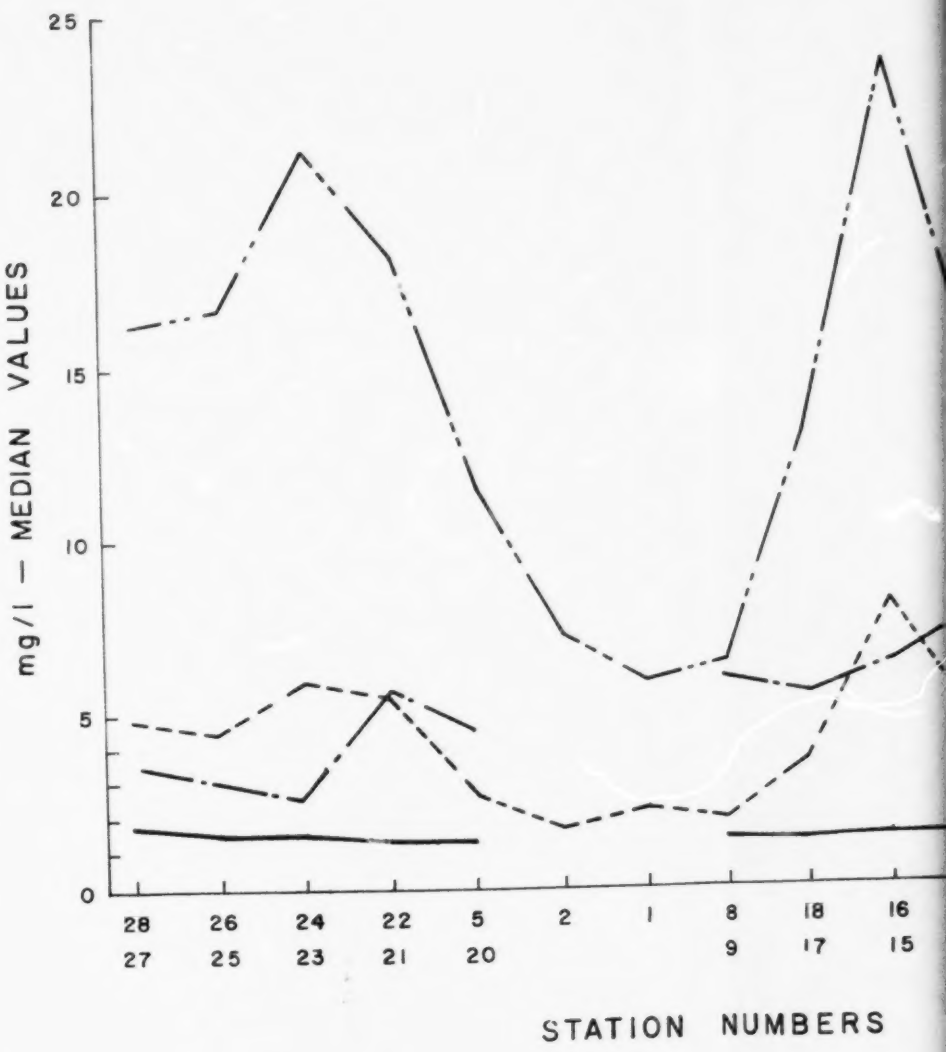


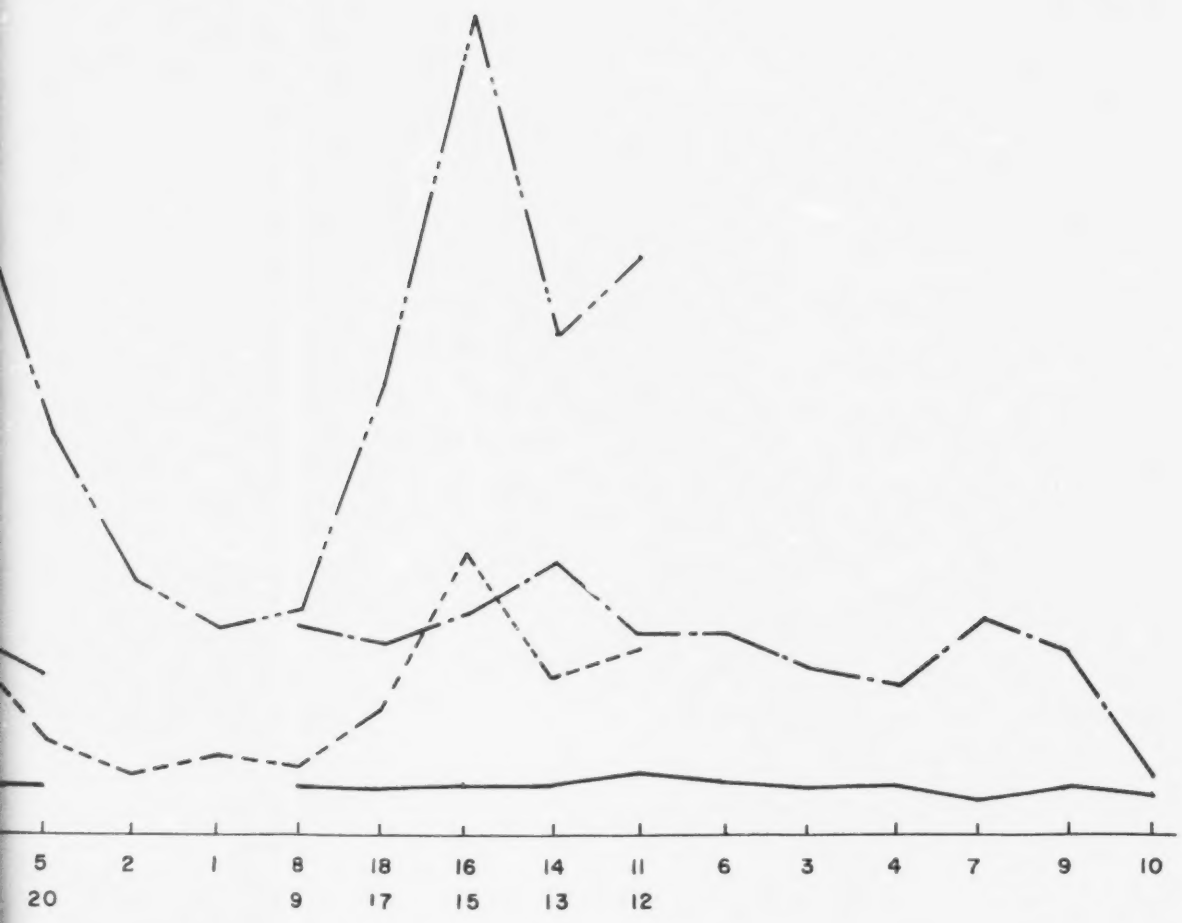
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

FECAL STREPTOCOCCUS
DENSITIES GEOMETRIC MEANS
LOWER ILLINOIS RIVER SYSTEM

DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE VII-4


25
20
15
10
5
0
mg/l — MEDIAN VALUES
28
27
26
25
24
23
22
21
5
20
2
1
8
9
18
17
16
15
STATION NUMBERS


LEG
BOD INS
" OFF
SUSPENDED
"
5 2 1 8 18 16 14 11 6 3 4 7 9 10
20 9 17 15 13 12
STATION NUMBERS

B

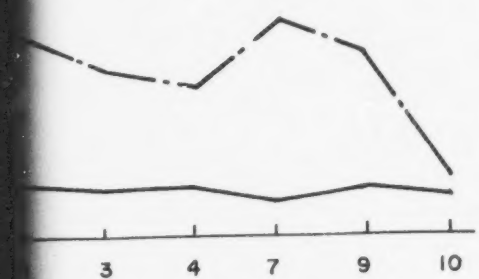
LEGEND

BOD INSHORE STATIONS

" OFFSHORE "

SUSPENDED SOLIDS INSHORE STATIONS

" " OFFSHORE "



GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

**BOD & SUSPENDED SOLIDS
JULY, 1961 VALUES AT
INSHORE & OFFSHORE STATIONS**

DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO ILLINOIS

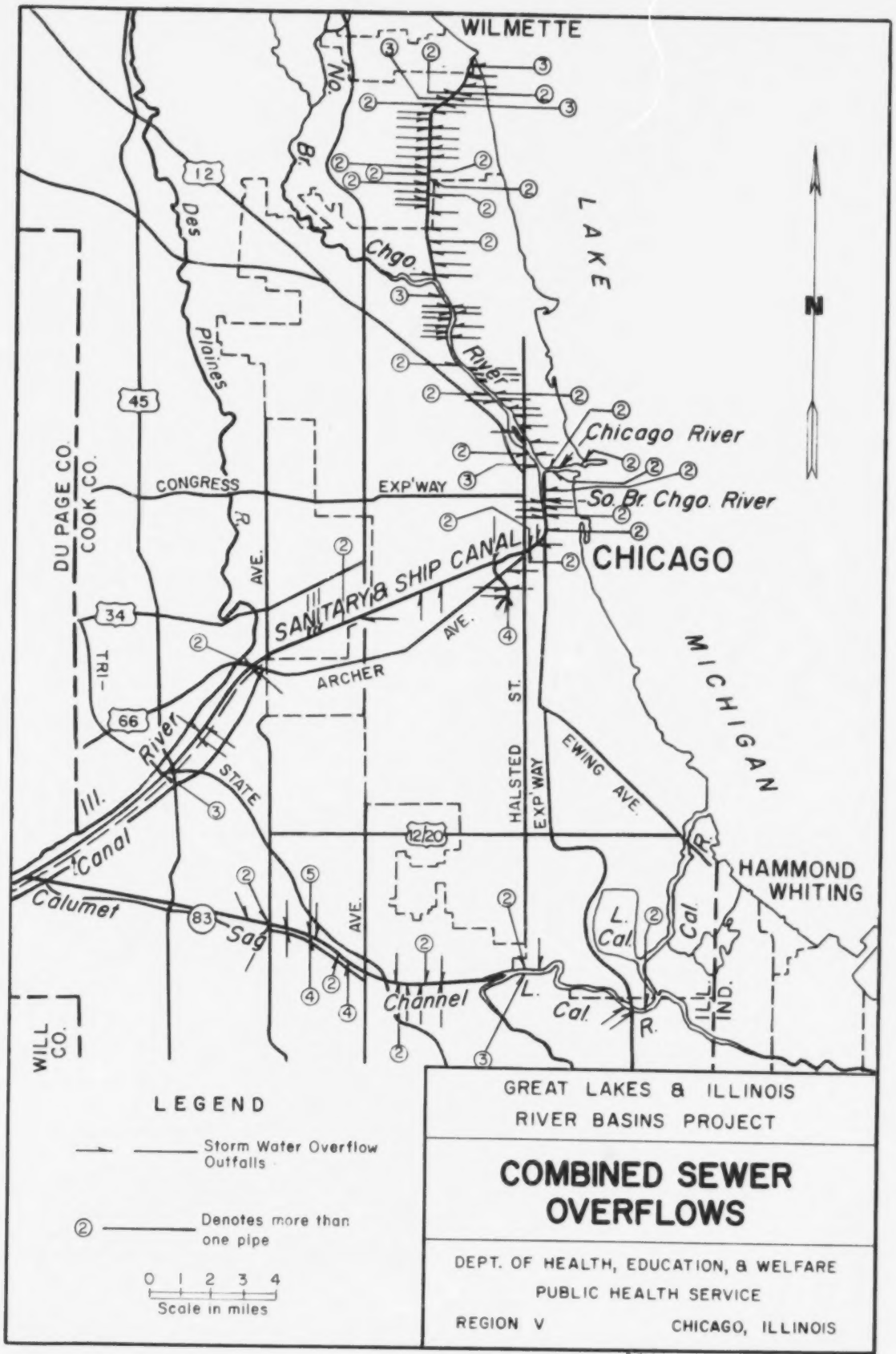
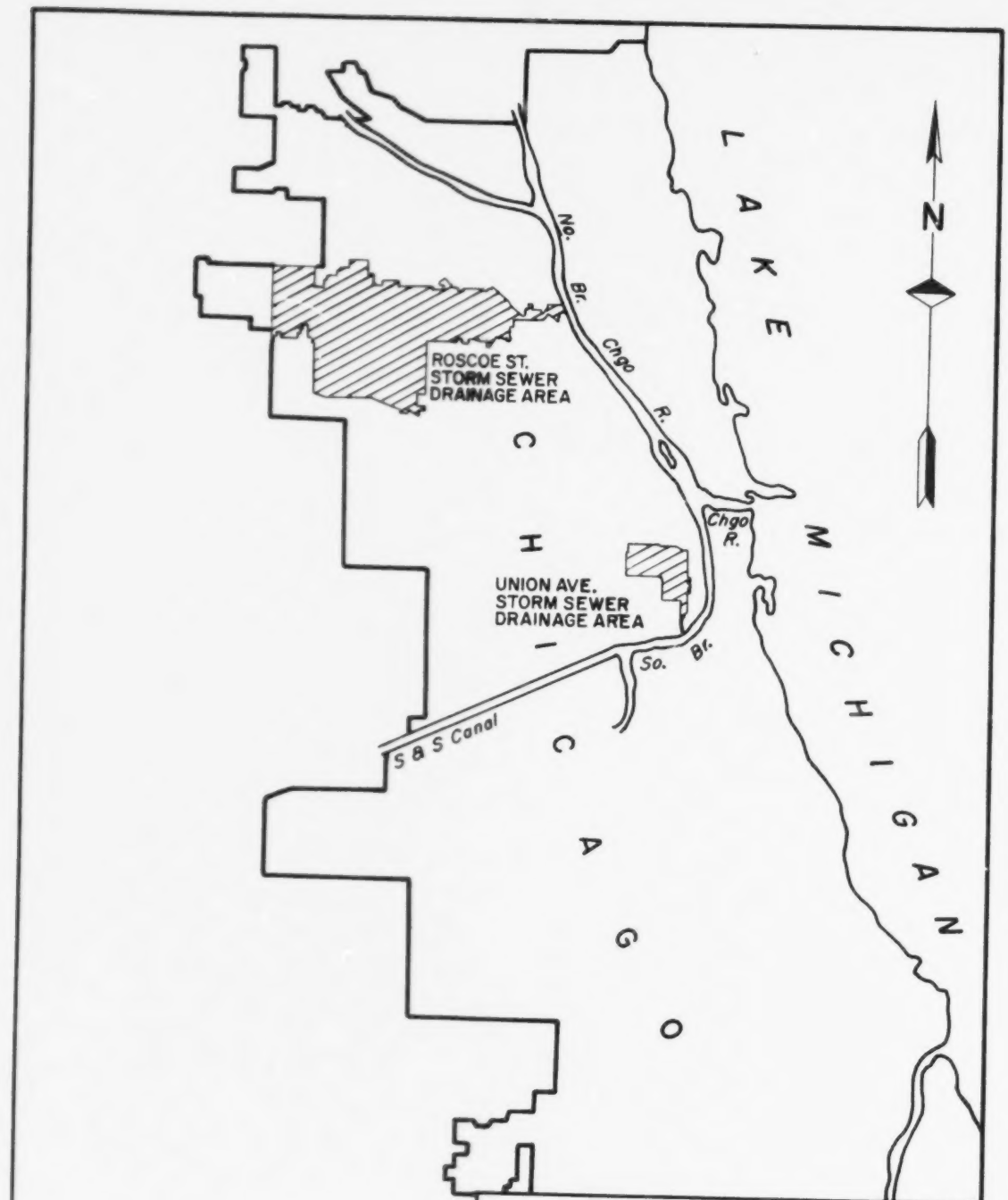


FIGURE VIII-2

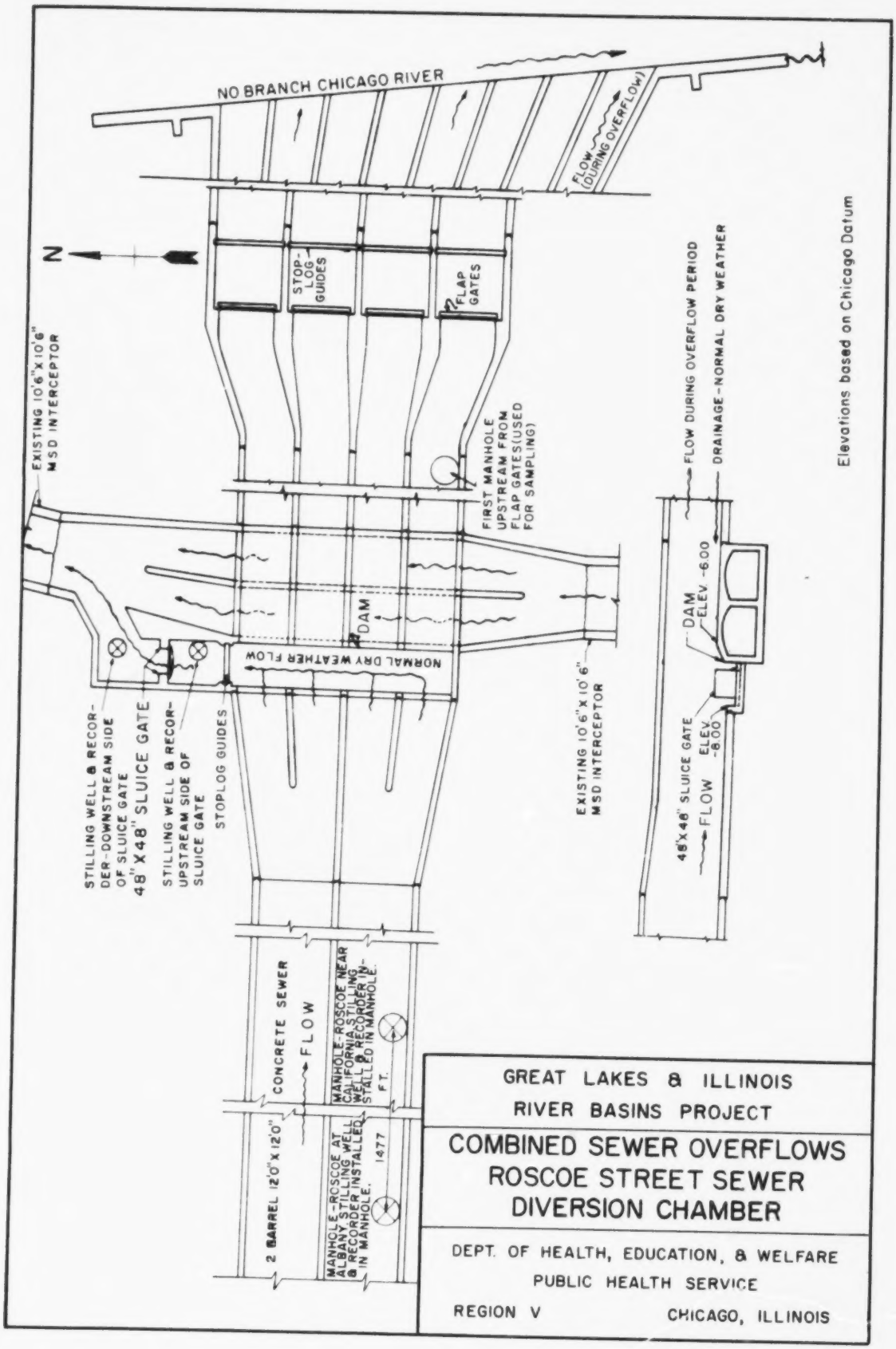


GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

COMBINED SEWER OVERFLOWS LOCATION MAP

DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE VIII-3



GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

COMBINED SEWER OVERFLOWS ROSCOE STREET SEWER DIVERSION CHAMBER

DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE VIII-4

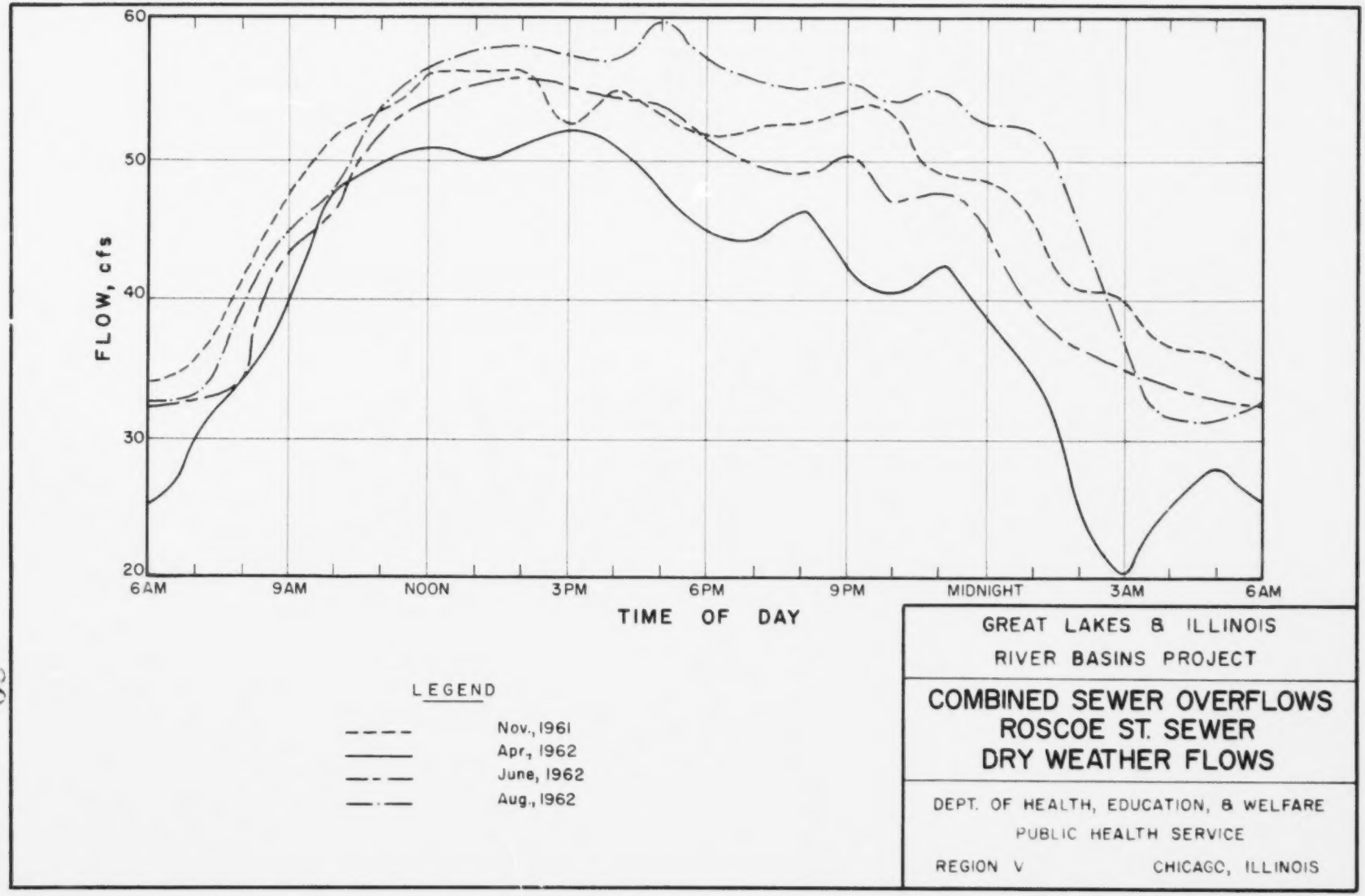
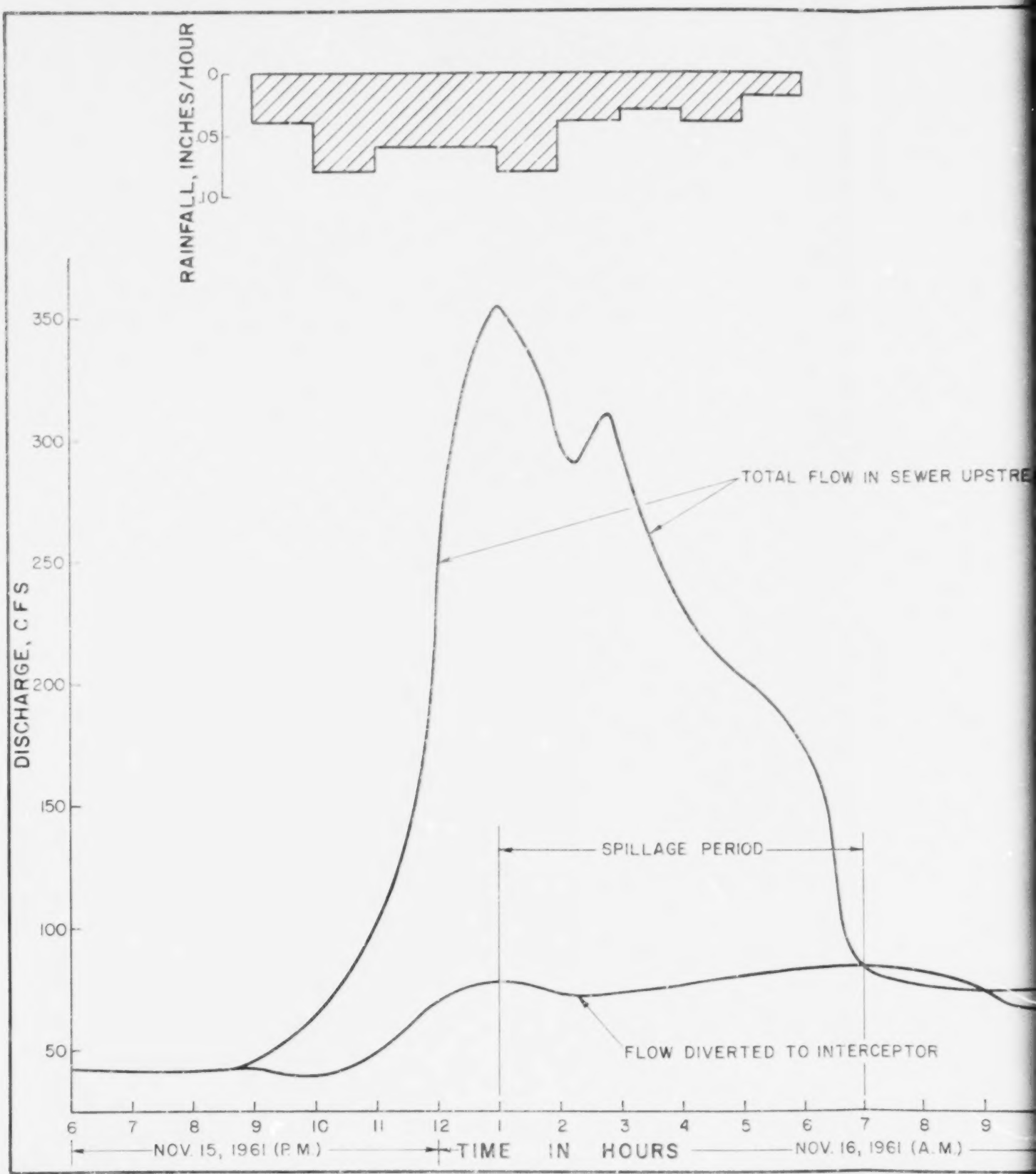
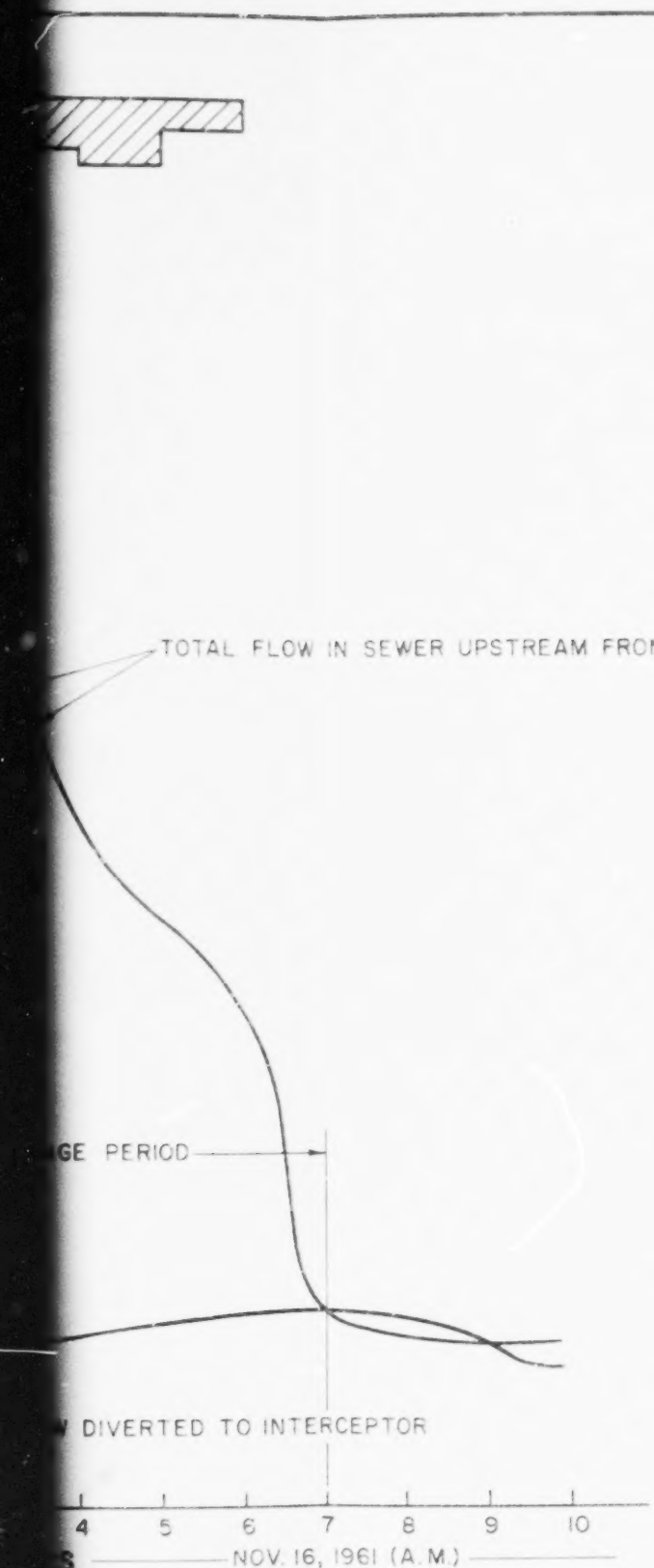


FIGURE VIII-5


RAINFALL, INCHES/HOUR
0
.05
.10
DISCHARGE, C F S
350
300
250
200
150
100
50
TOTAL FLOW IN SEWER UPSTRE
SPILLAGE PERIOD
FLOW DIVERTED TO INTERCEPTOR
6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9
NOV. 15, 1961 (P.M.)
TIME IN HOURS
NOV. 16, 1961 (A.M.)

A



GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

ROSCOE STREET SEWER
STORM WATER OVERFLOW
STORM – NOV. 15 – 16, 1961

DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE VIII-6

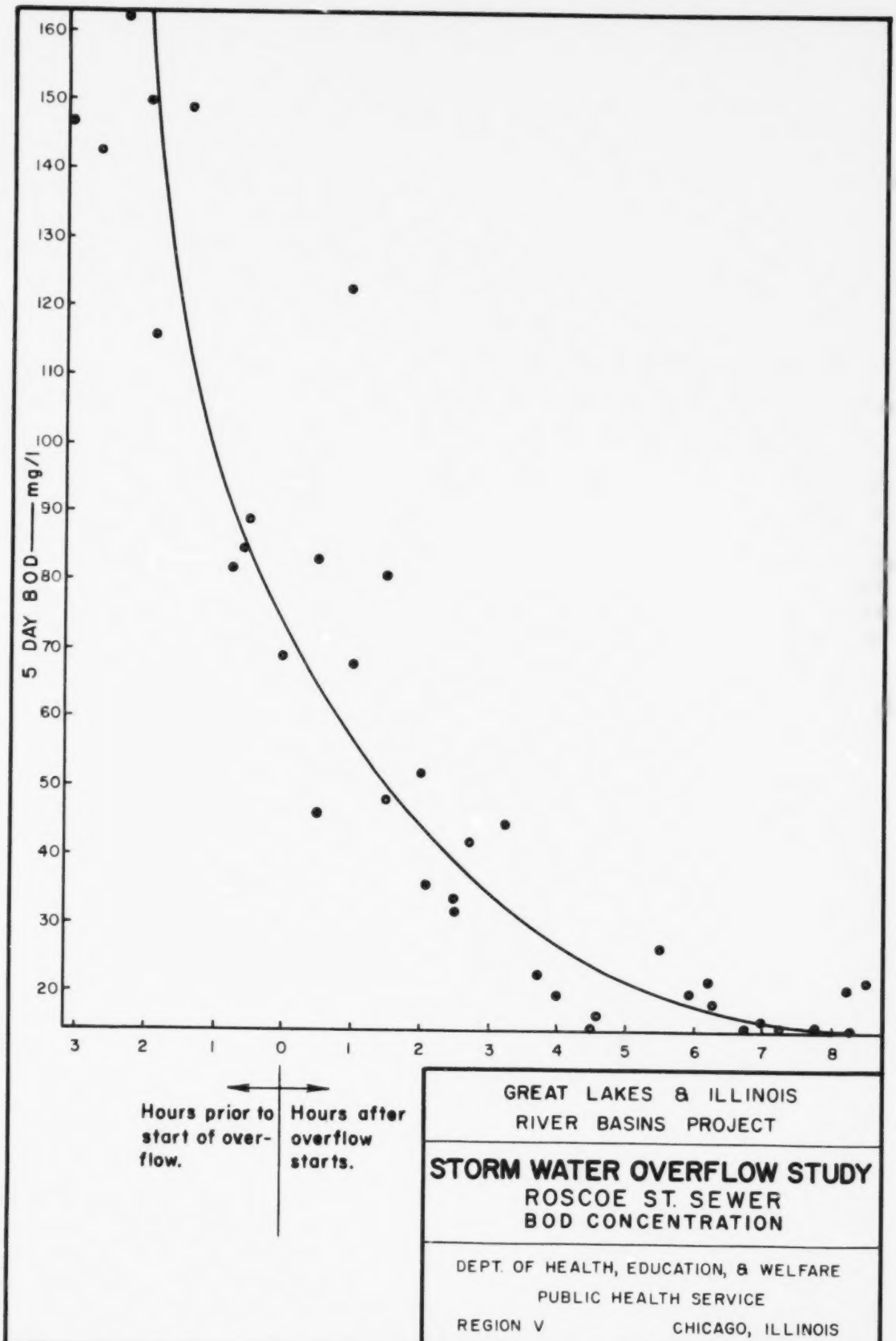
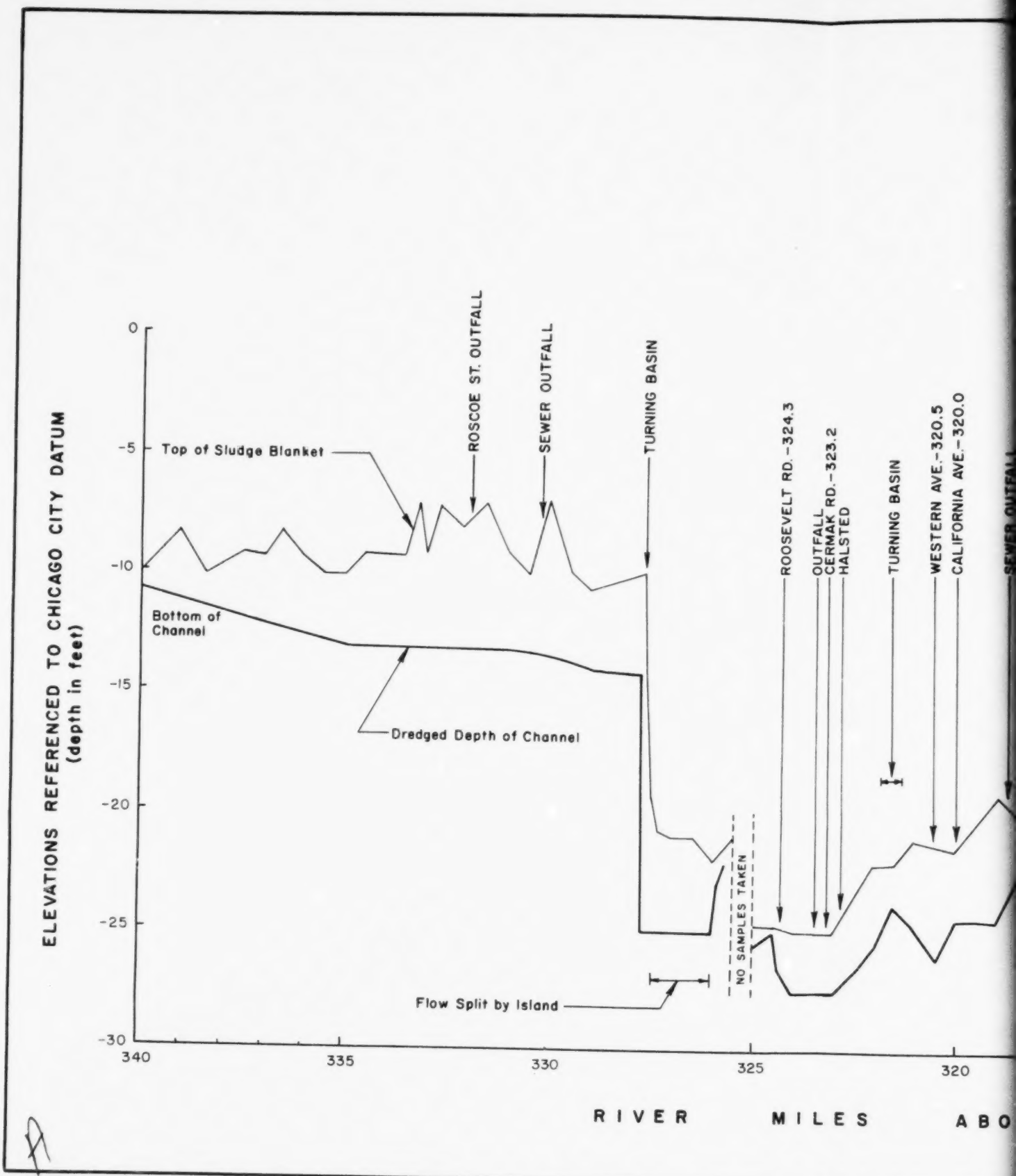
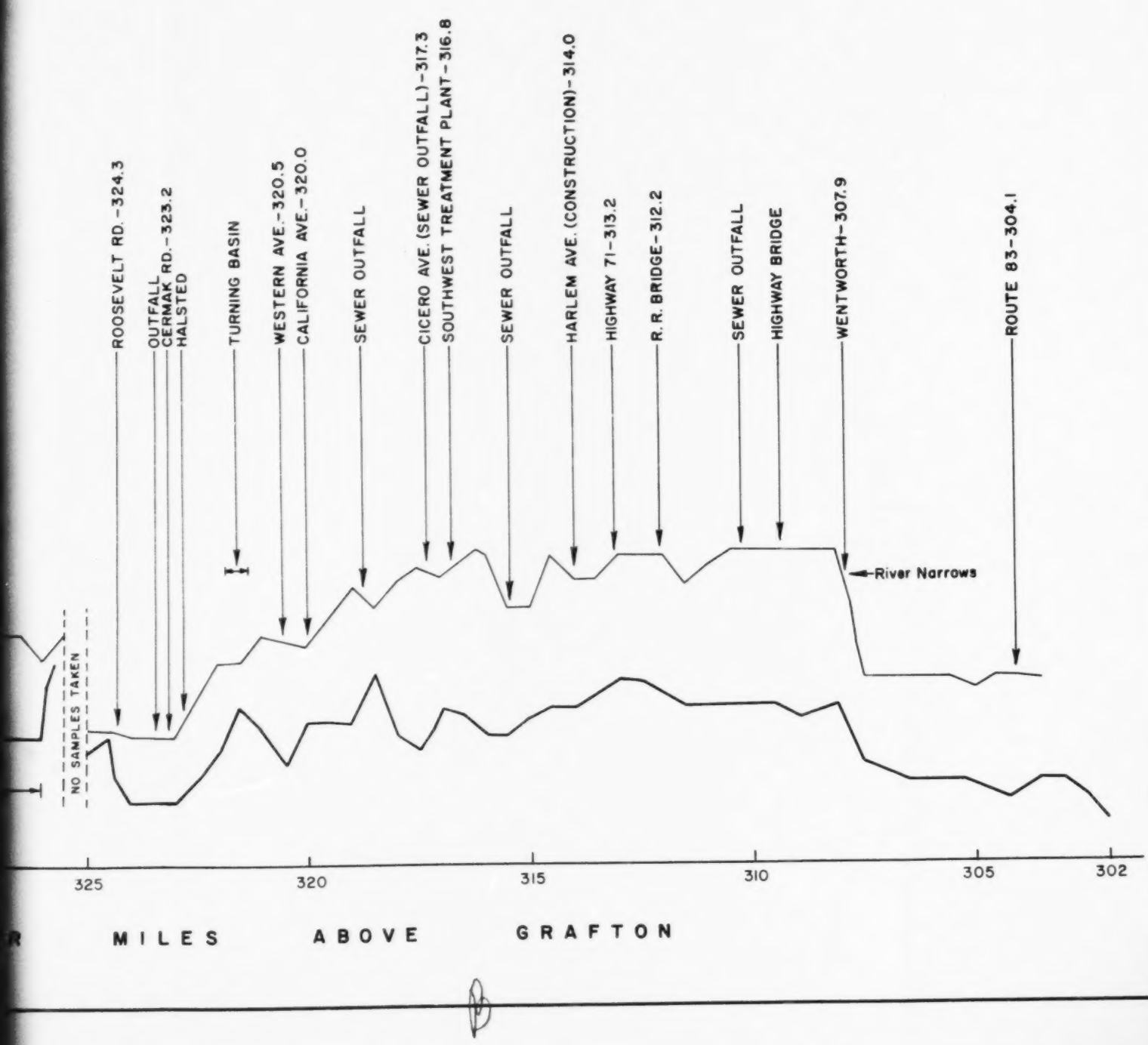
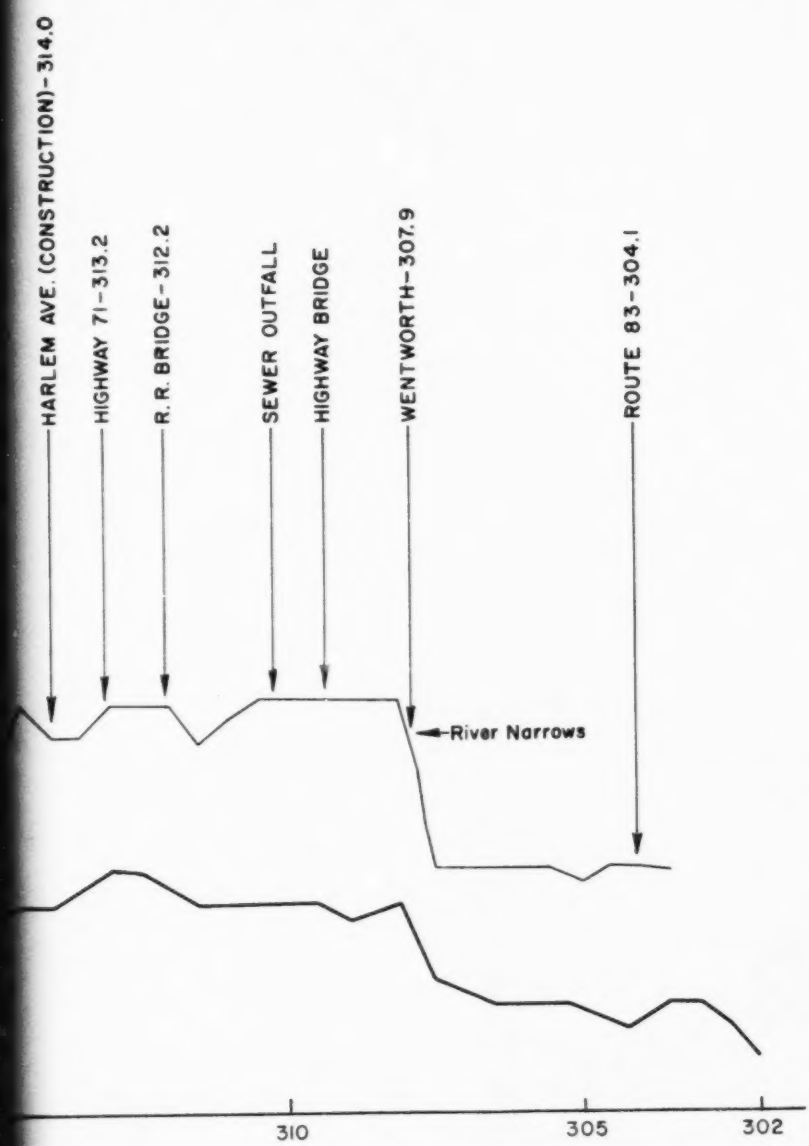


FIGURE VIII-7


ELEVATIONS REFERENCED TO CHICAGO CITY DATUM
(depth in feet)
0
-5
-10
-15
-20
-25
-30
340
335
330
325
320
RIVER MILES ABO
Top of Sludge Blanket
Bottom of Channel
Dredged Depth of Channel
ROSCOE ST. OUTFALL
SEWER OUTFALL
TURNING BASIN
ROOSEVELT RD.-324.3
OUTFALL
CERMAK RD.-323.2
HALSTED
TURNING BASIN
WESTERN AVE.-320.5
CALIFORNIA AVE.-320.0
NO SAMPLES TAKEN
Flow Split by Island


ROOSEVELT RD.-324.3
OUTFALL
CERMAK RD.-323.2
HALSTED
TURNING BASIN
WESTERN AVE.-320.5
CALIFORNIA AVE.-320.0
SEWER OUTFALL
CICERO AVE. (SEWER OUTFALL)-317.3
SOUTHWEST TREATMENT PLANT-316.8
SEWER OUTFALL
HARLEM AVE. (CONSTRUCTION)-314.0
HIGHWAY 71-313.2
R. R. BRIDGE-312.2
SEWER OUTFALL
HIGHWAY BRIDGE
WENTWORTH-307.9
ROUTE 83-304.1
River Narrows
NO SAMPLES TAKEN
325
320
315
310
305
302
MILES ABOVE GRAFTON



LEGEND

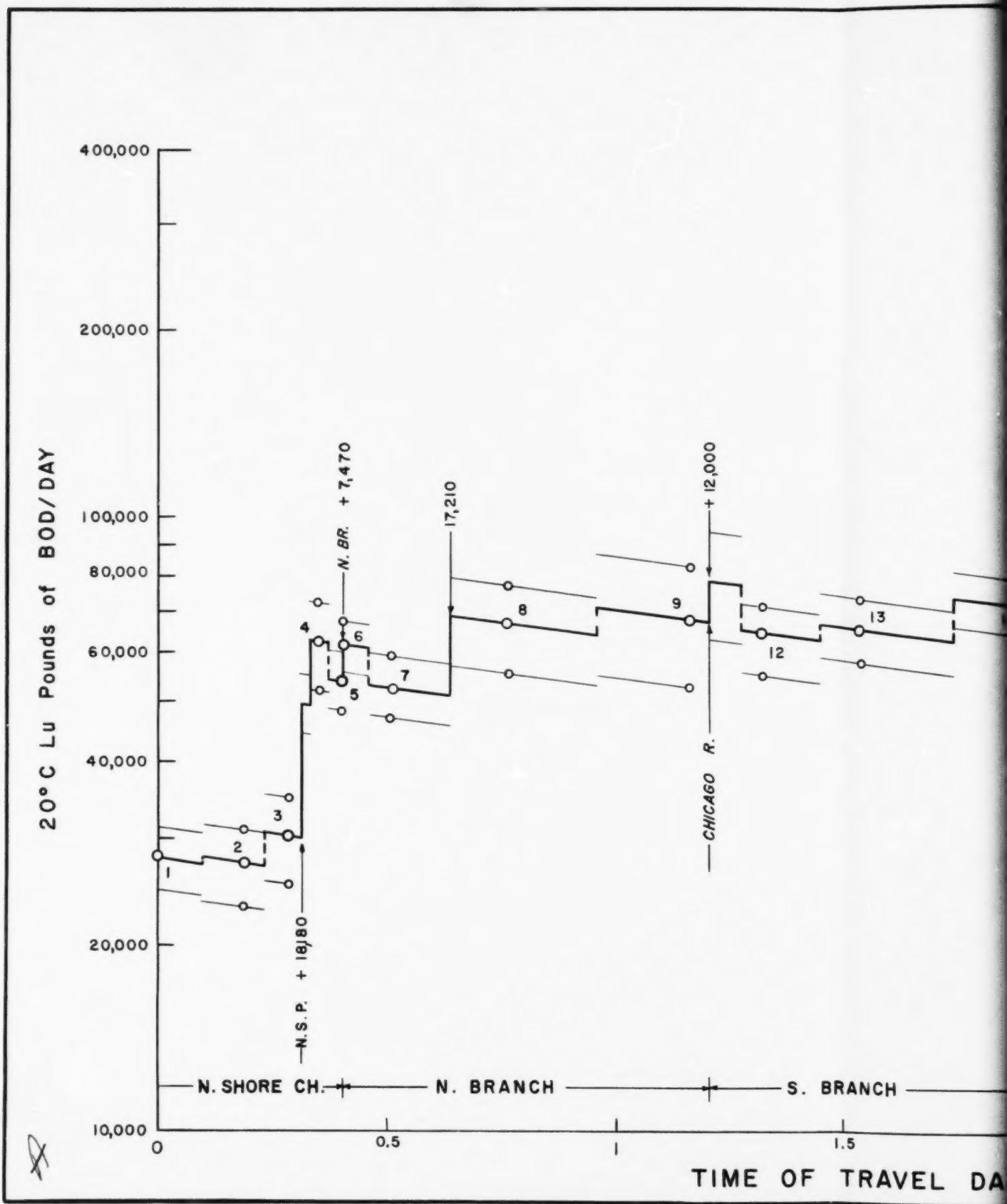
——TOP OF SLUDGE BLANKET

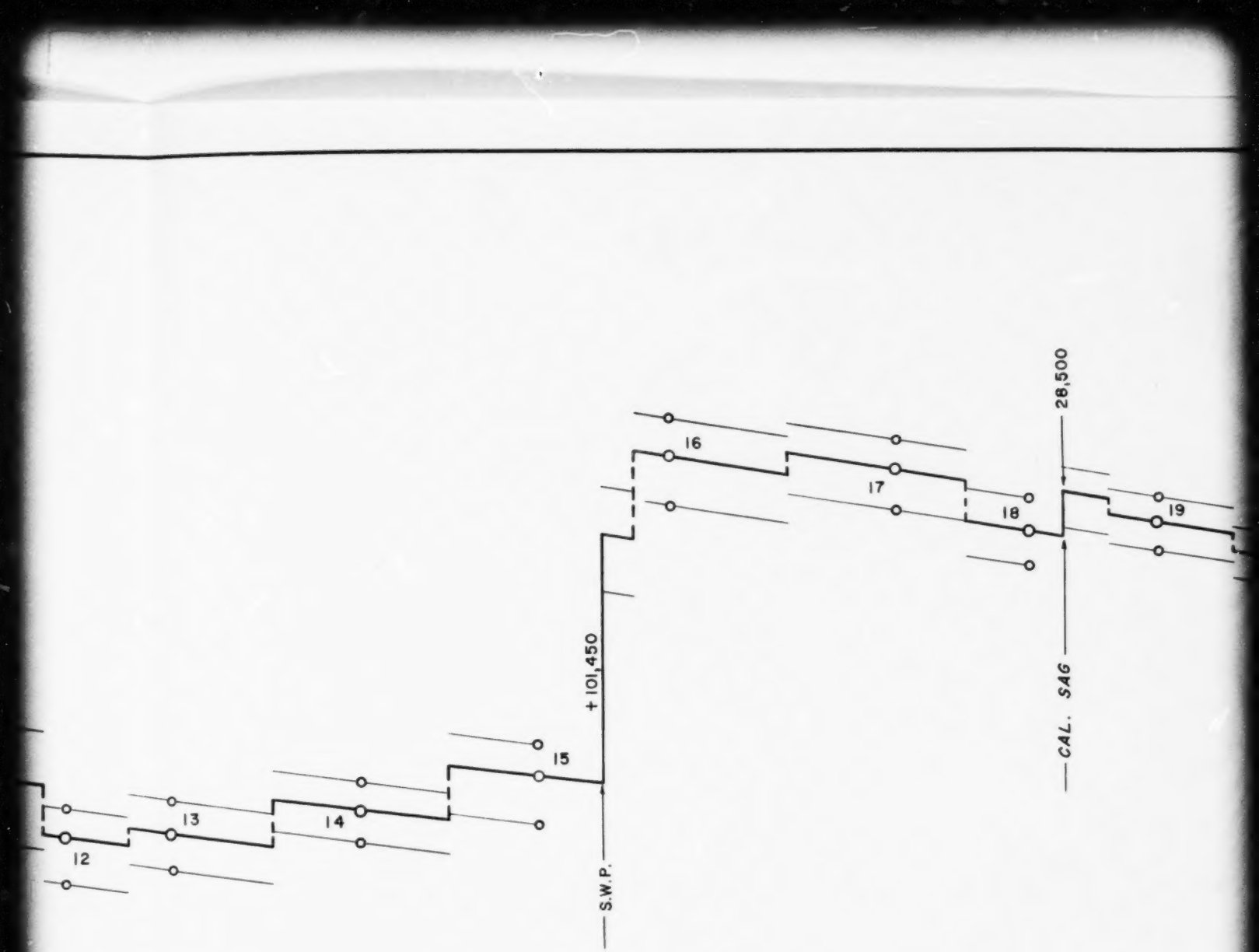
——ELEVATION OF RIVER BOTTOM

GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

SLUDGE DEPOSITS UPPER ILLINOIS WATERWAY

DEPT. OF HEALTH, EDUCATION, & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO ILLINOIS


400,000
200,000
100,000
80,000
60,000
40,000
20,000
10,000
20° C Lu Pounds of BOD/DAY
N. BR. + 7,470
17,210
+ 12,000
CHICAGO R.
N.S.P. + 18,180
1
2
3
4
5
6
7
8
9
12
13
N. SHORE CH.
N. BRANCH
S. BRANCH
0
0.5
1
1.5
TIME OF TRAVEL DA



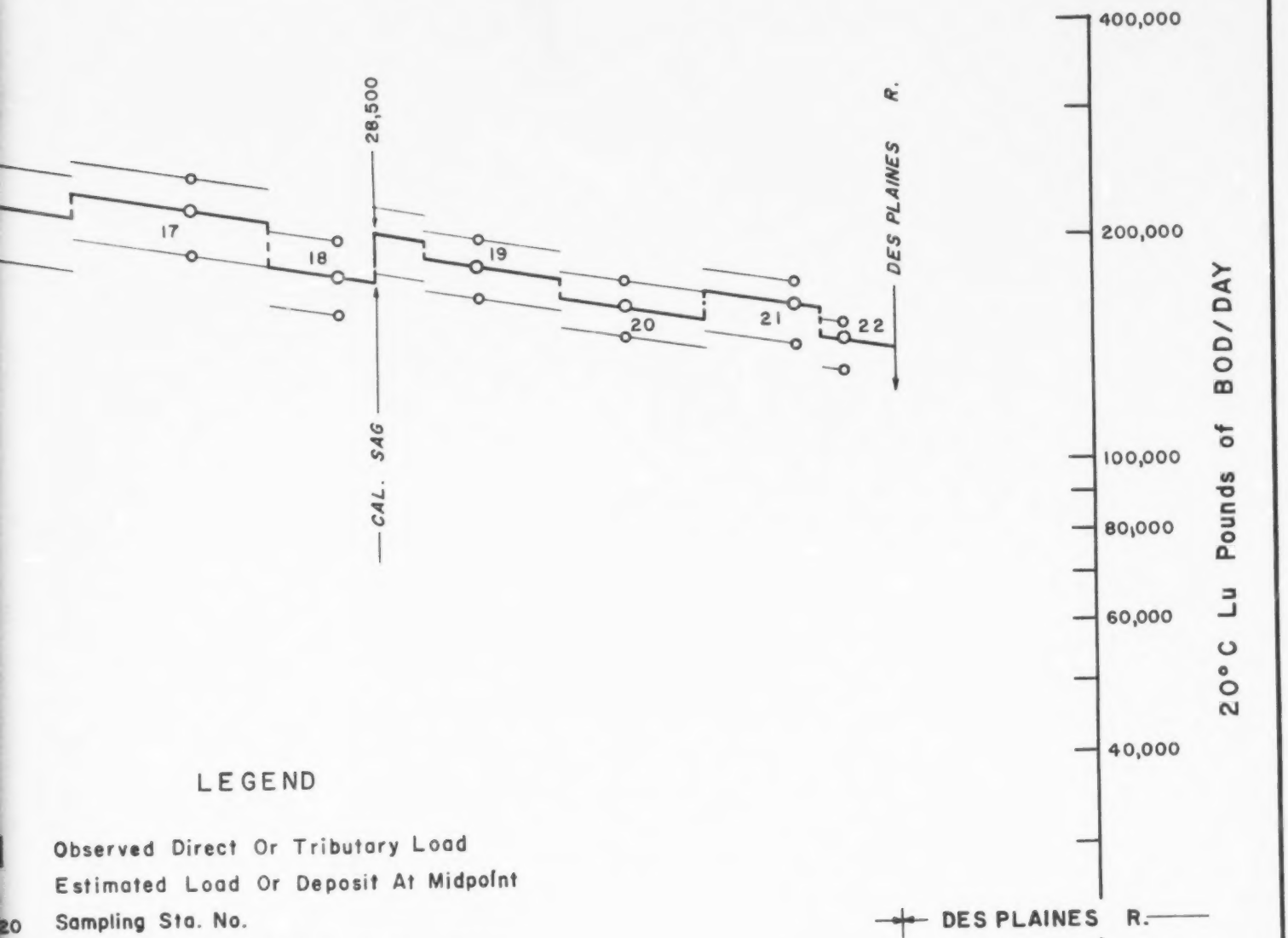
LEGEND

	Observed Direct Or Tributary Load
	Estimated Load Or Deposit At Midpoint
O20	Sampling Sta. No.
—o—	95% Confidence Interval Of True Means

S. BRANCH — S. & S. CANAL

1.5 2 2.5 3 3.5

ME OF TRAVEL DAYS FROM NO. 1 DOWN MAIN STEM



LEGEND

Observed Direct Or Tributary Load

Estimated Load Or Deposit At Midpoint

20 Sampling Sta. No.

95% Confidence Interval Of True Means

S. CANAL

3 3.5 4

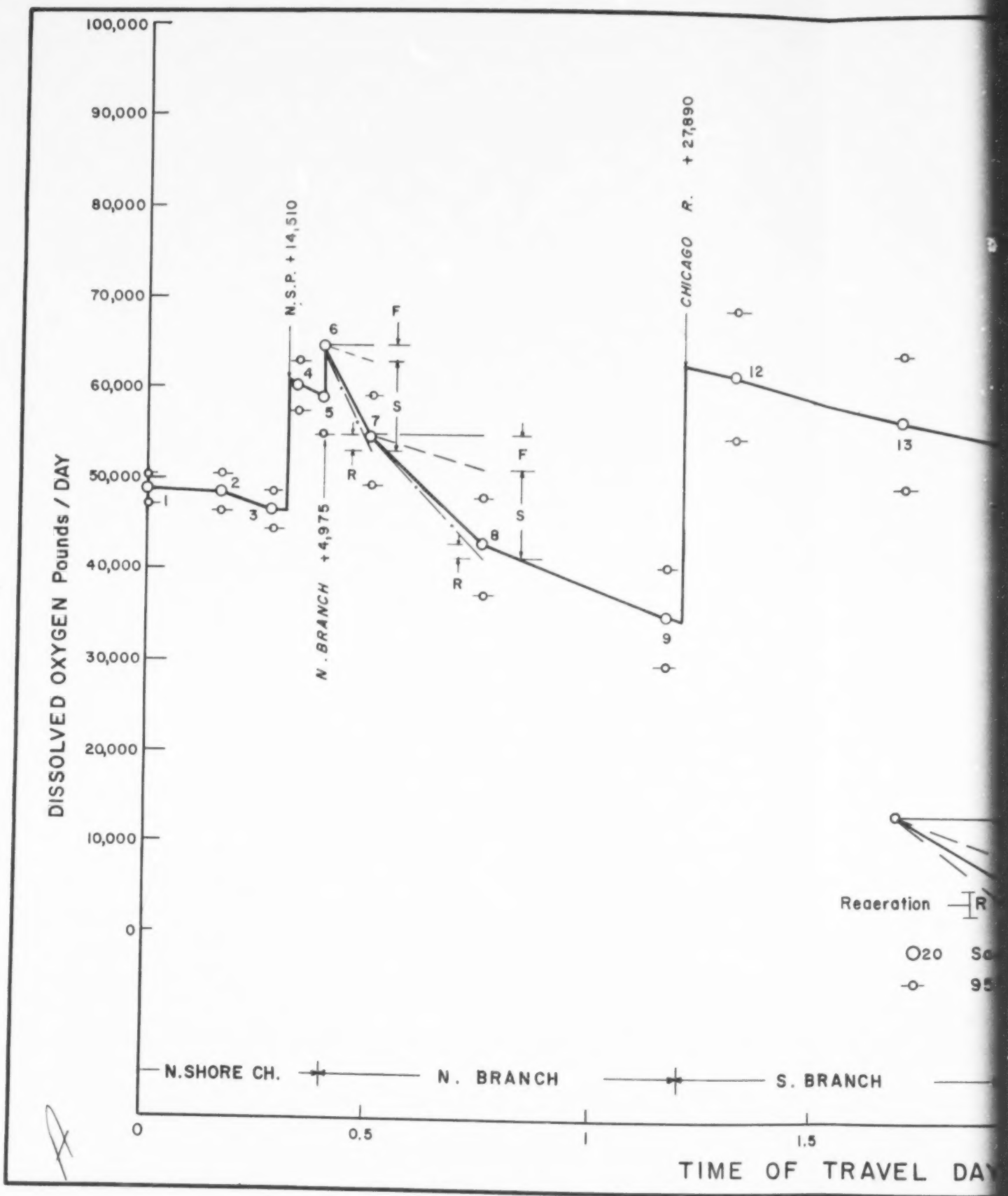
MAIN STEM

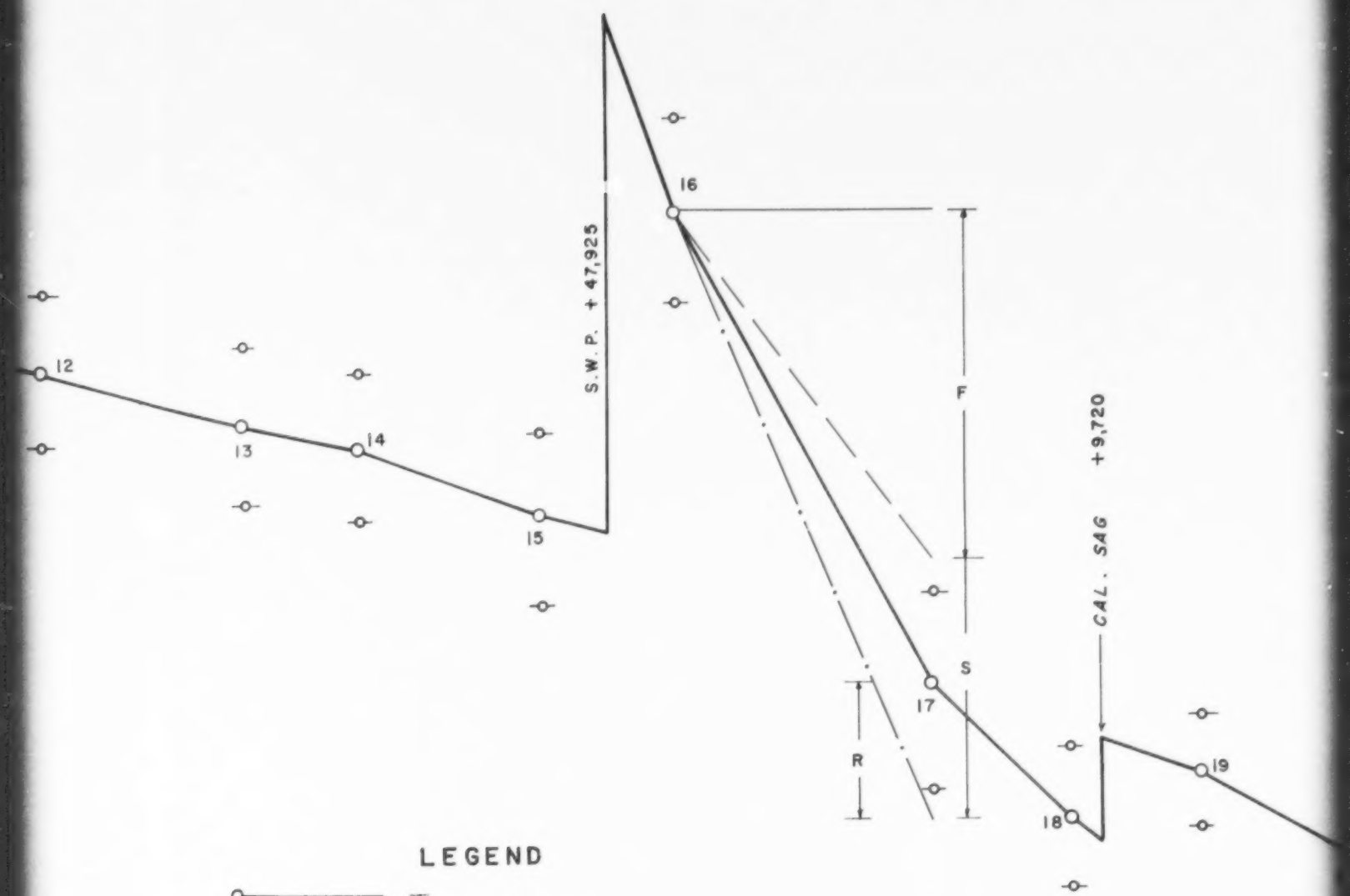
GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

INTEGRATION OF POLLUTION LOADS
April-May, Study Period — 1961
UPPER ILLINOIS RIVER BASIN

DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE IX-1


DISSOLVED OXYGEN Pounds / DAY
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
N.S.P. +14,510
N. BRANCH +4,975
CHICAGO R. +27,890
F
S
R
1
2
3
4
5
6
7
8
9
12
13
Reaeration
N.SHORE CH.
N. BRANCH
S. BRANCH
0
0.5
1
1.5
TIME OF TRAVEL DA



LEGEND

F – Flowing Demand

S – Sludge Demand

Reaeration – R

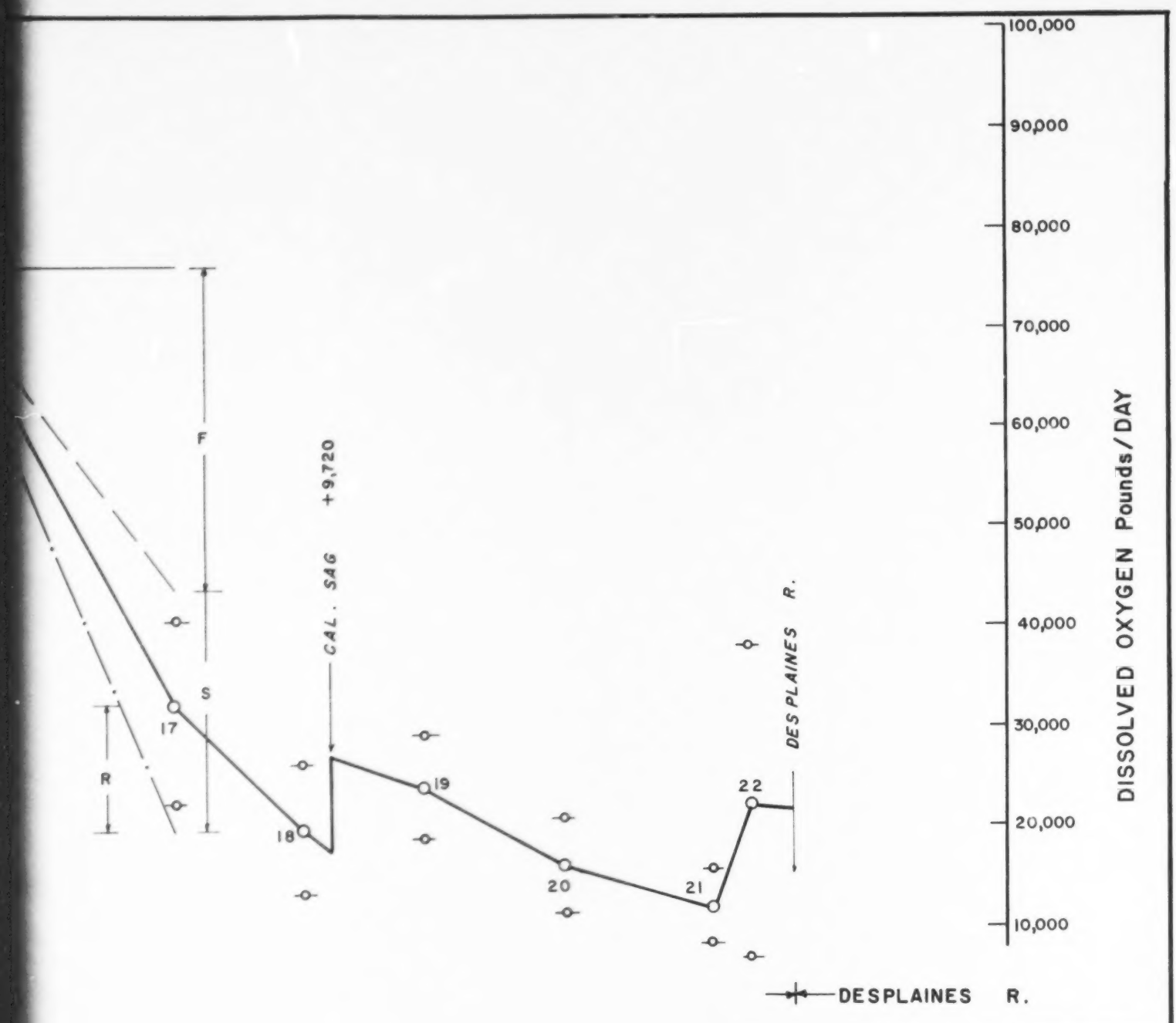
○20 Sampling Sta. No.

⊸ 95% Confidence Interval Of True Means

S. BRANCH — S. & S. CANAL

1.5 2 2.5 3 3.5

E OF TRAVEL DAYS FROM NO. 1 DOWN MAIN STEM

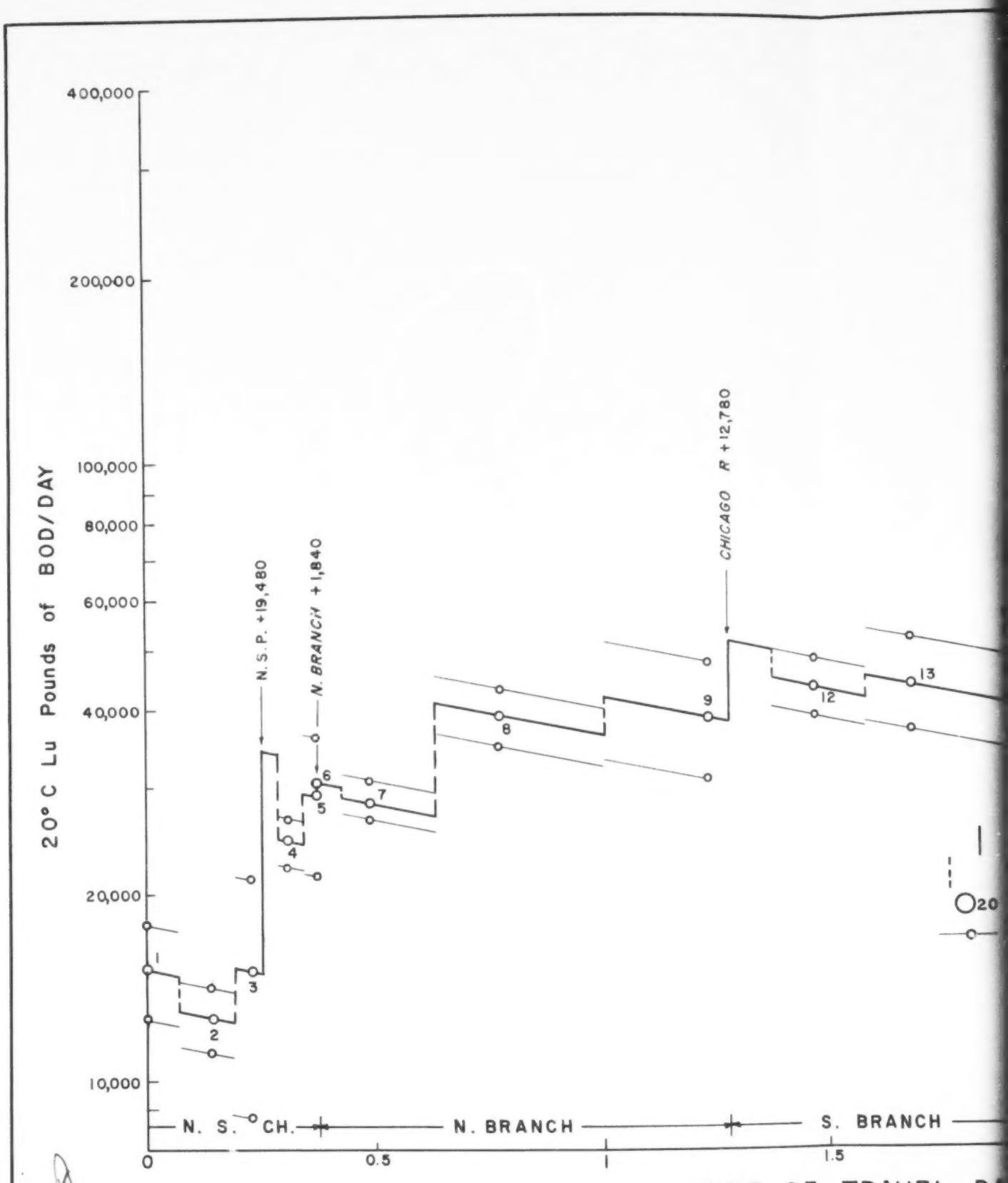


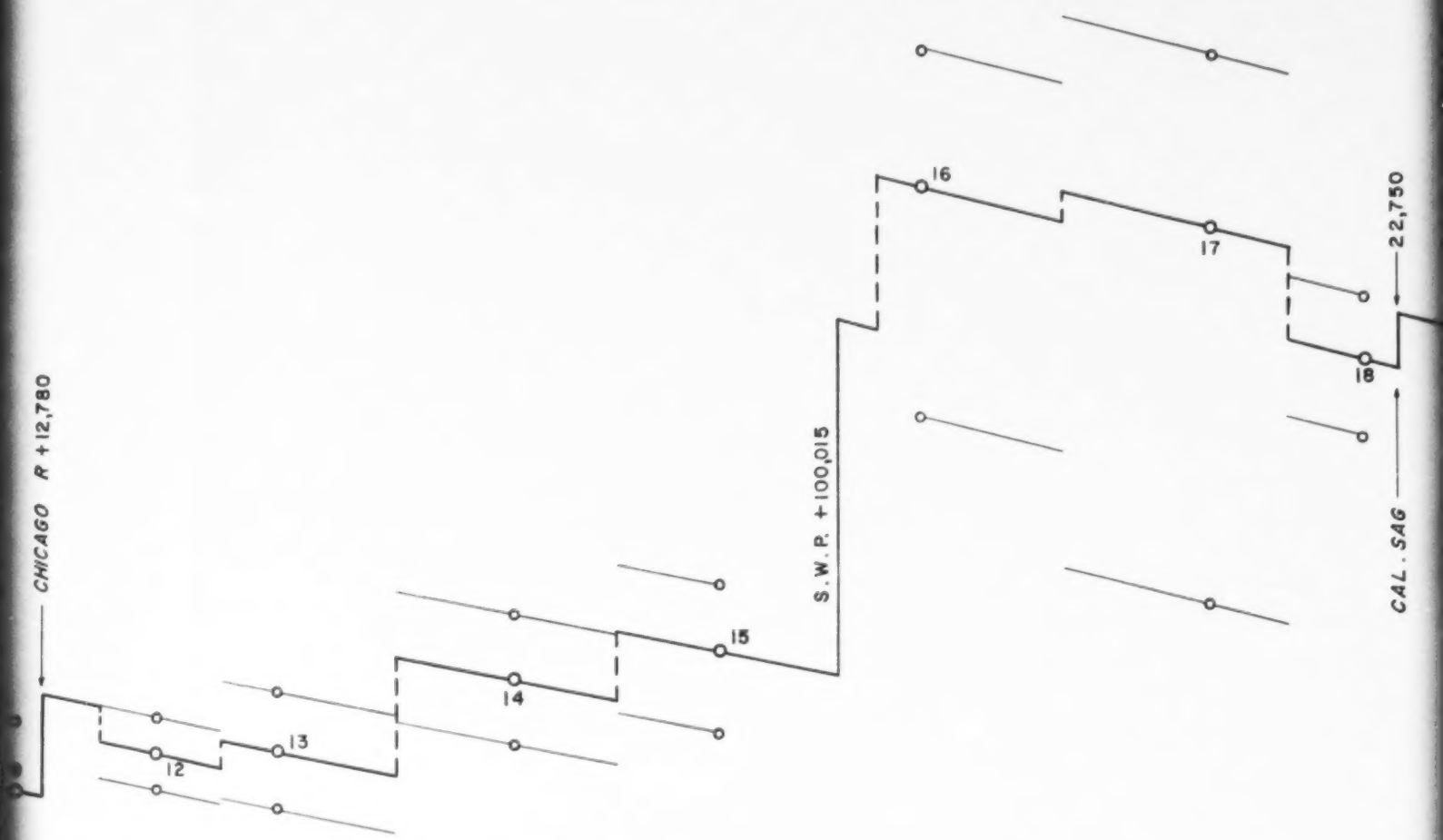
GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

MEASURED DISSOLVED OXYGEN
April-May, Study Period — 1961
UPPER ILLINOIS RIVER BASIN

DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

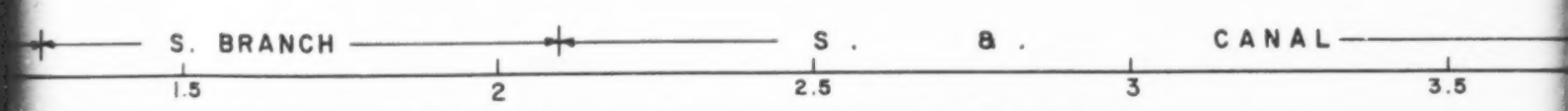
FIGURE IX-2


400,000
200,000
100,000
80,000
60,000
40,000
20,000
10,000
20°C Lu Pounds of BOD/DAY
N. S. P. +19,480
N. BRANCH +1,840
CHICAGO R +12,780
1
2
3
4
5
6
7
8
9
12
13
20
N. S.
CH.
N. BRANCH
S. BRANCH
0
0.5
1
1.5
TIME OF TRAVEL DA

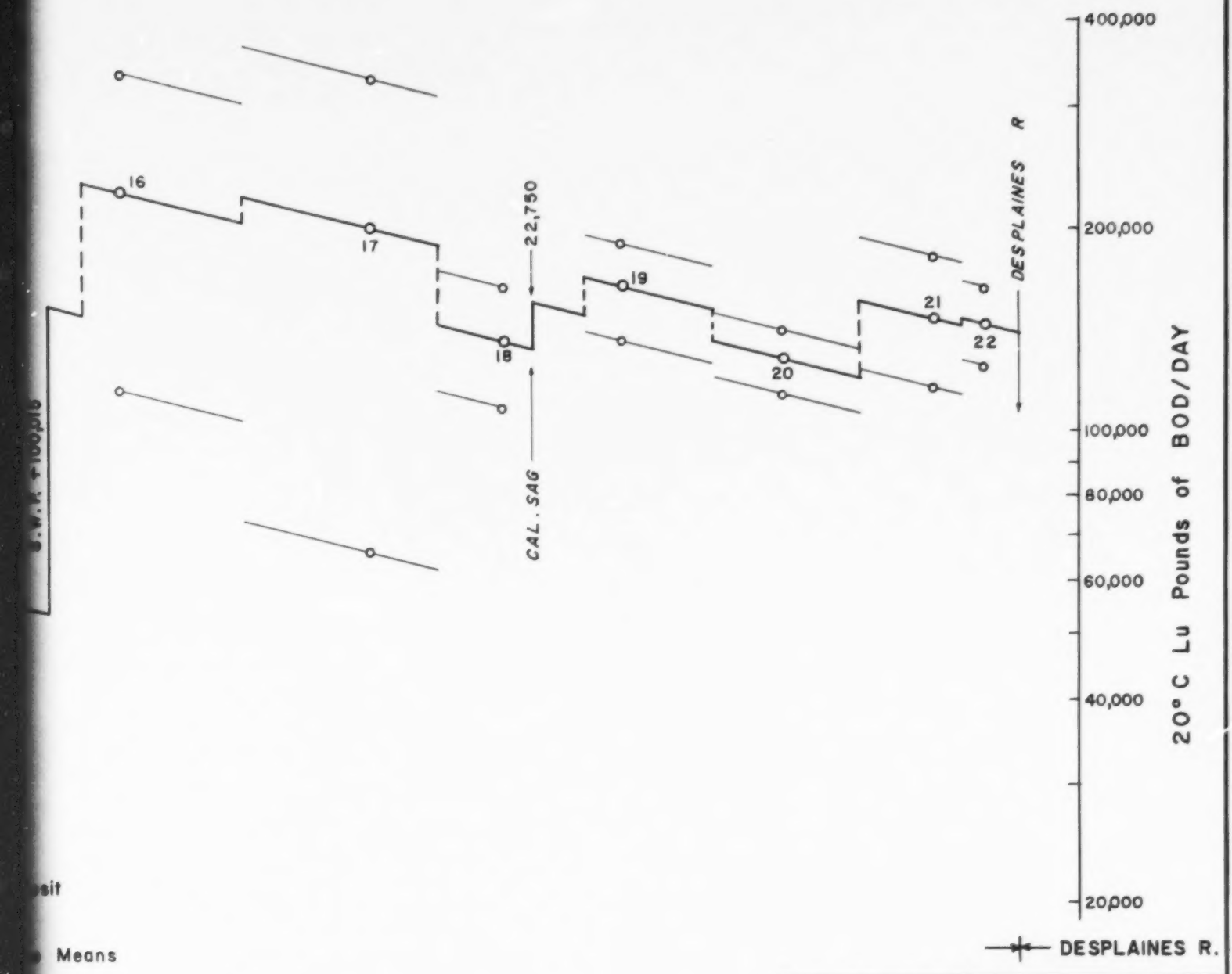


LEGEND

|	Measured Tributary Load
⋮	Estimated Midpoint Load or Deposit
○20	Sampling Sta. No.
—o—	95% Confidence Interval Of True Means



ME OF TRAVEL DAYS FROM NO. I DOWN MAIN STEM



sit

Means

GREAT LAKES & ILLINOIS
RIVER BASINS PROJECT

INTEGRATION OF POLLUTION LOADS
July , Study Period - 1961
UPPER ILLINOIS RIVER BASIN

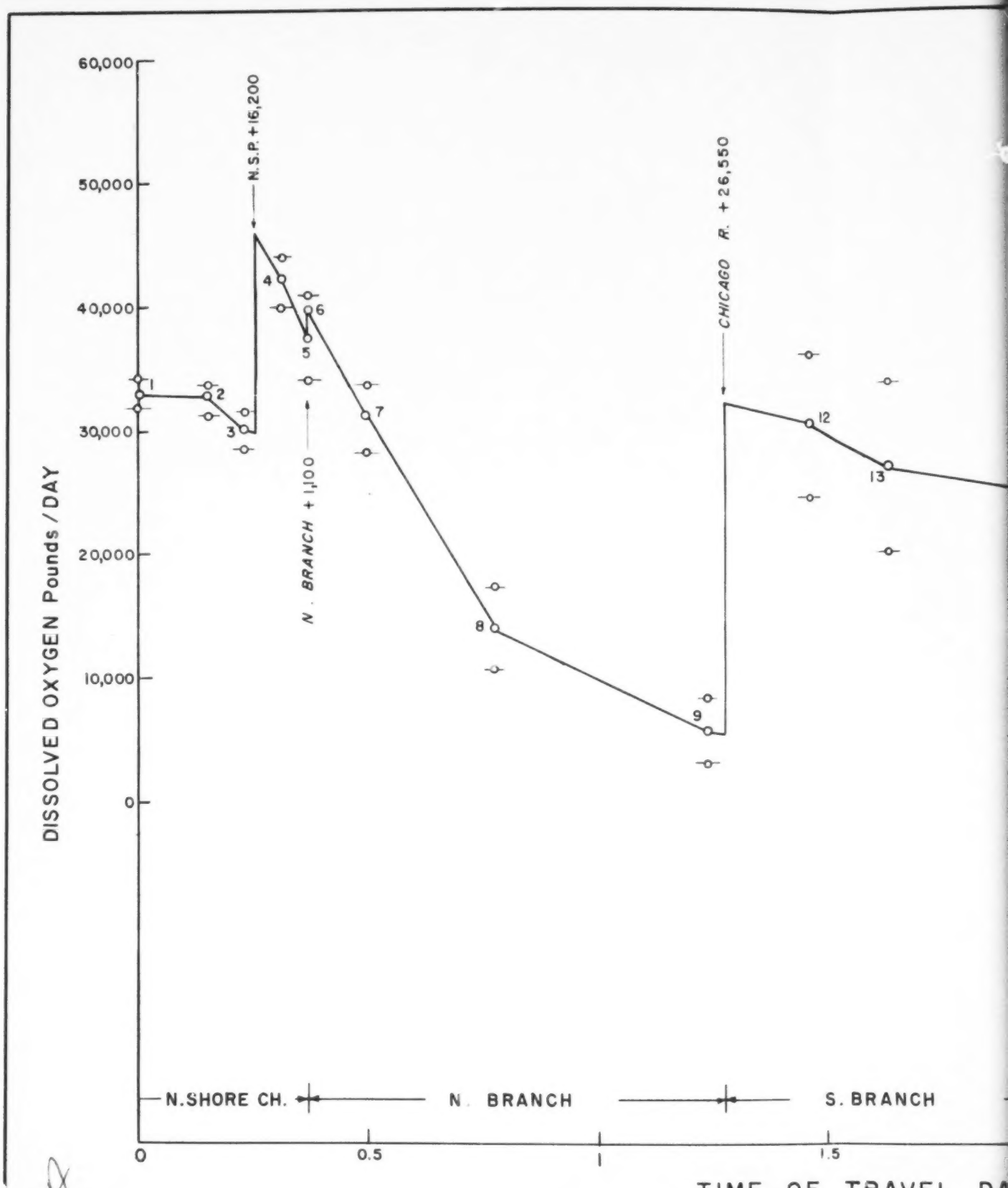
DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

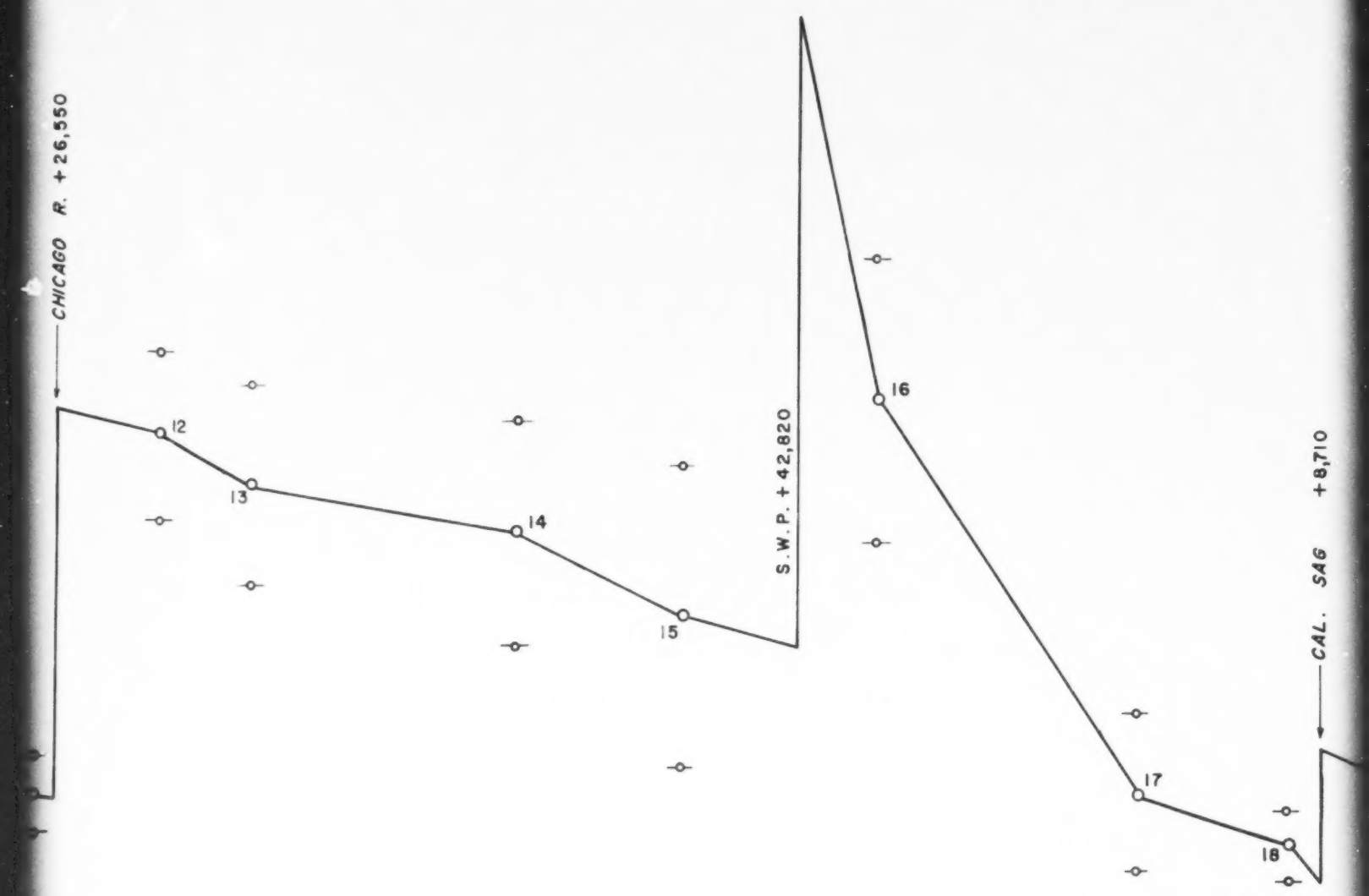
8 . CANAL

3 3.5 4

MAIN STEM

FIGURE IX-3


60,000
50,000
40,000
30,000
20,000
10,000
0
DISSOLVED OXYGEN Pounds / DAY
N.S.P. +16,200
N. BRANCH +1,100
CHICAGO R. +26,550
1
2
3
4
5
6
7
8
9
12
13
N.SHORE CH.
N. BRANCH
S. BRANCH
0
0.5
1
1.5
TIME OF TRAVEL DA



LEGEND

O20 Sampling Sta. No.

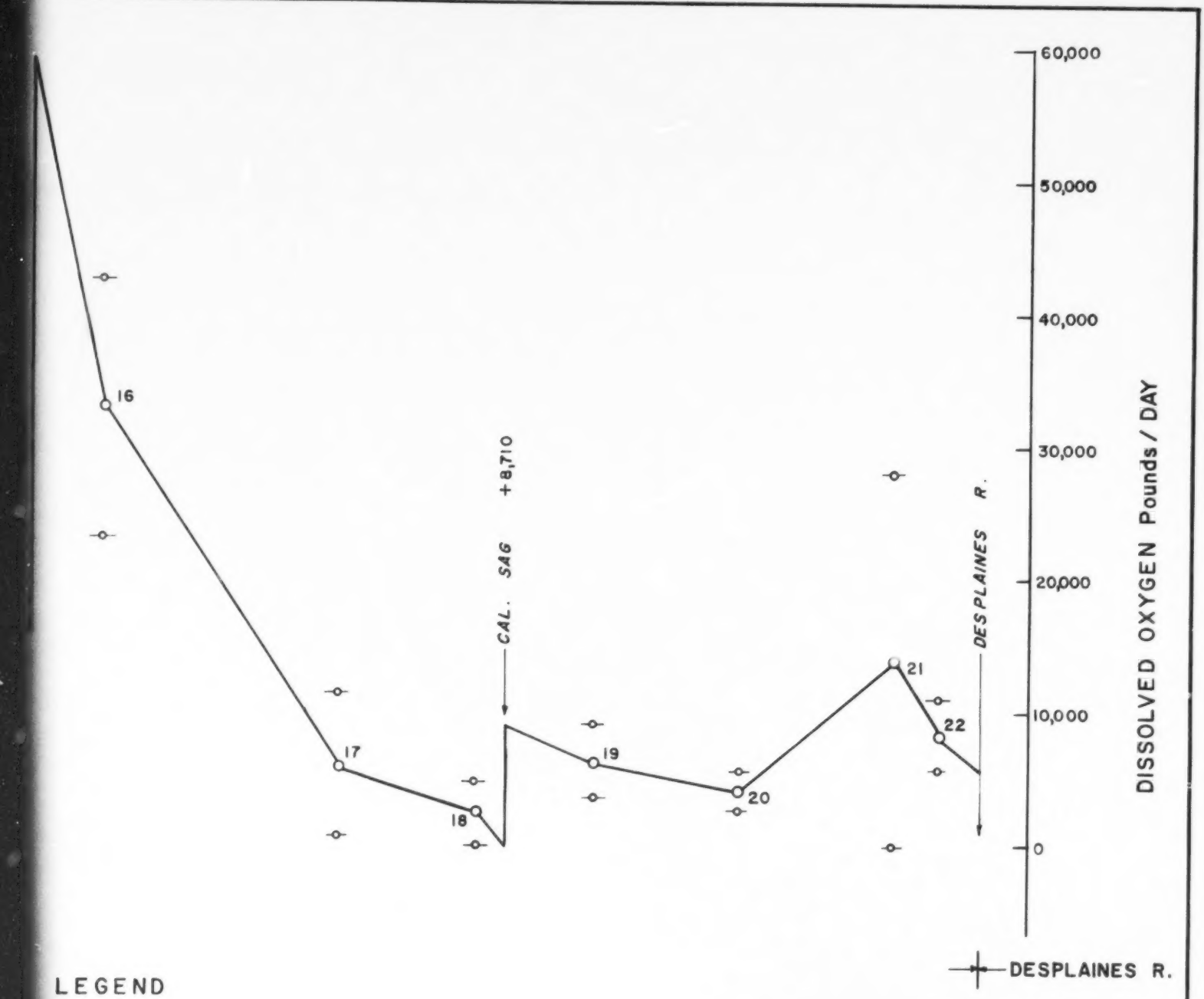
95% Confidence Interval Of True Means

S. BRANCH — S. & S. CANAL

1.5 2 2.5 3 3.5

IME OF TRAVEL DAYS FROM NO. I DOWN MAIN STEM

B



LEGEND

g Sta. No.

onfidence Interval Of True Means

& S. CANAL

3 3.5 4

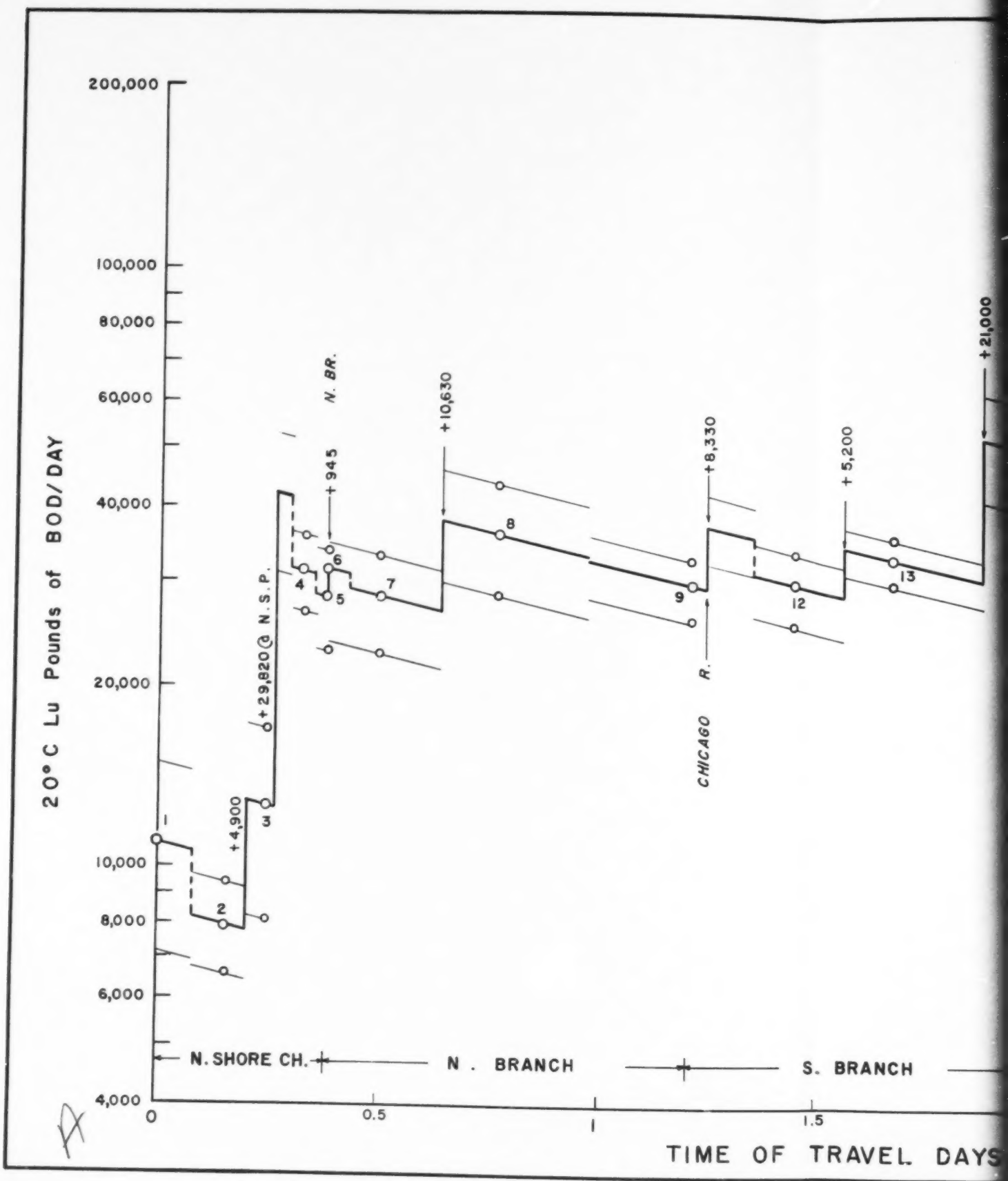
MAIN STEM

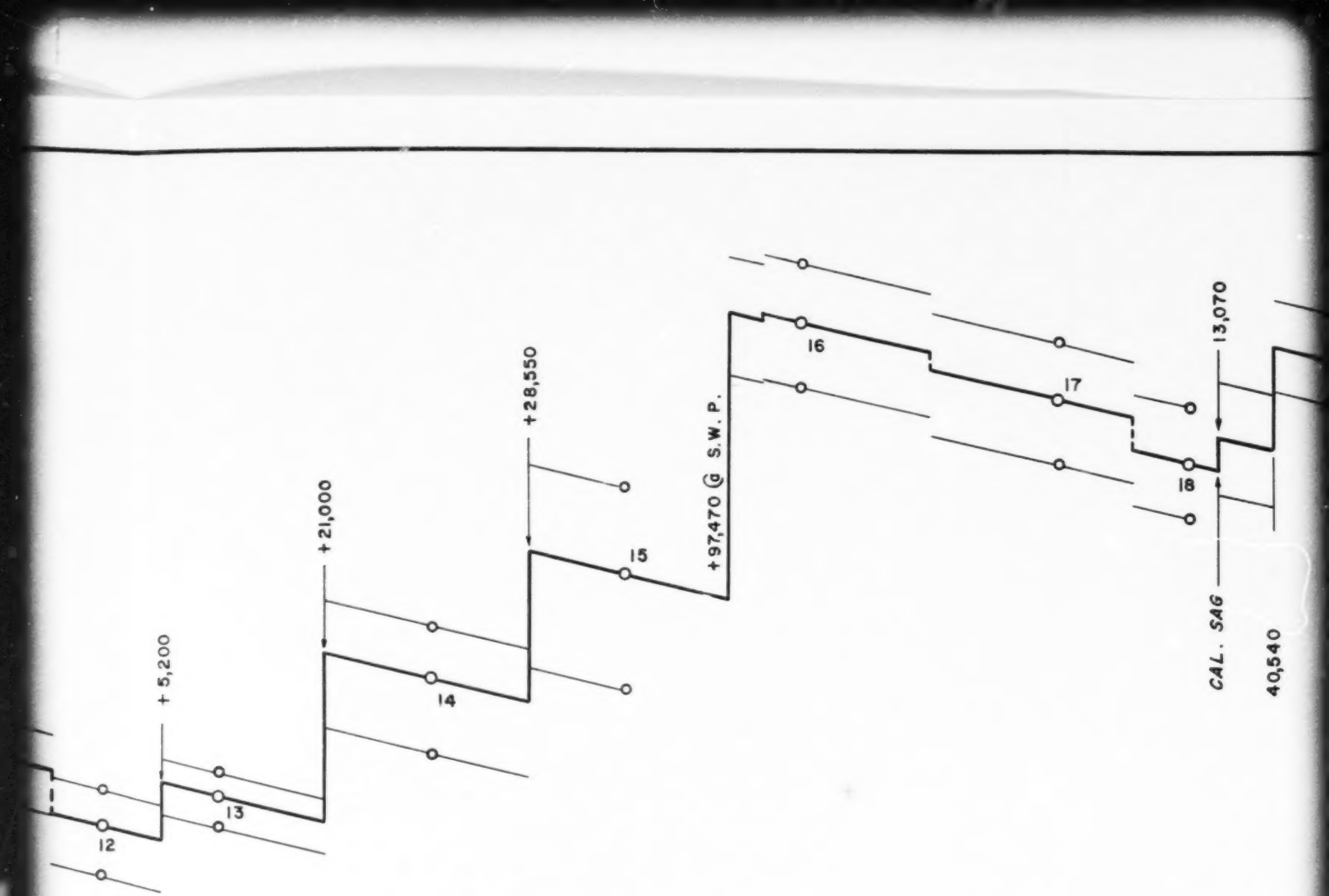
GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

MEASURED DISSOLVED OXYGEN
July, Study Period – 1961
UPPER ILLINOIS RIVER BASIN

DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE IX-4


20° C Lu Pounds of BOD/DAY
200,000
100,000
80,000
60,000
40,000
20,000
10,000
8,000
6,000
4,000
0
0.5
1
1.5
TIME OF TRAVEL DAYS
N. SHORE CH.
N . BRANCH
S. BRANCH
+4,900
+29,820@ N.S.P.
+945
N. BR.
+10,630
+8,330
CHICAGO R.
+5,200
+21,000
1
2
3
4
5
6
7
8
9
12
13



LEGEND

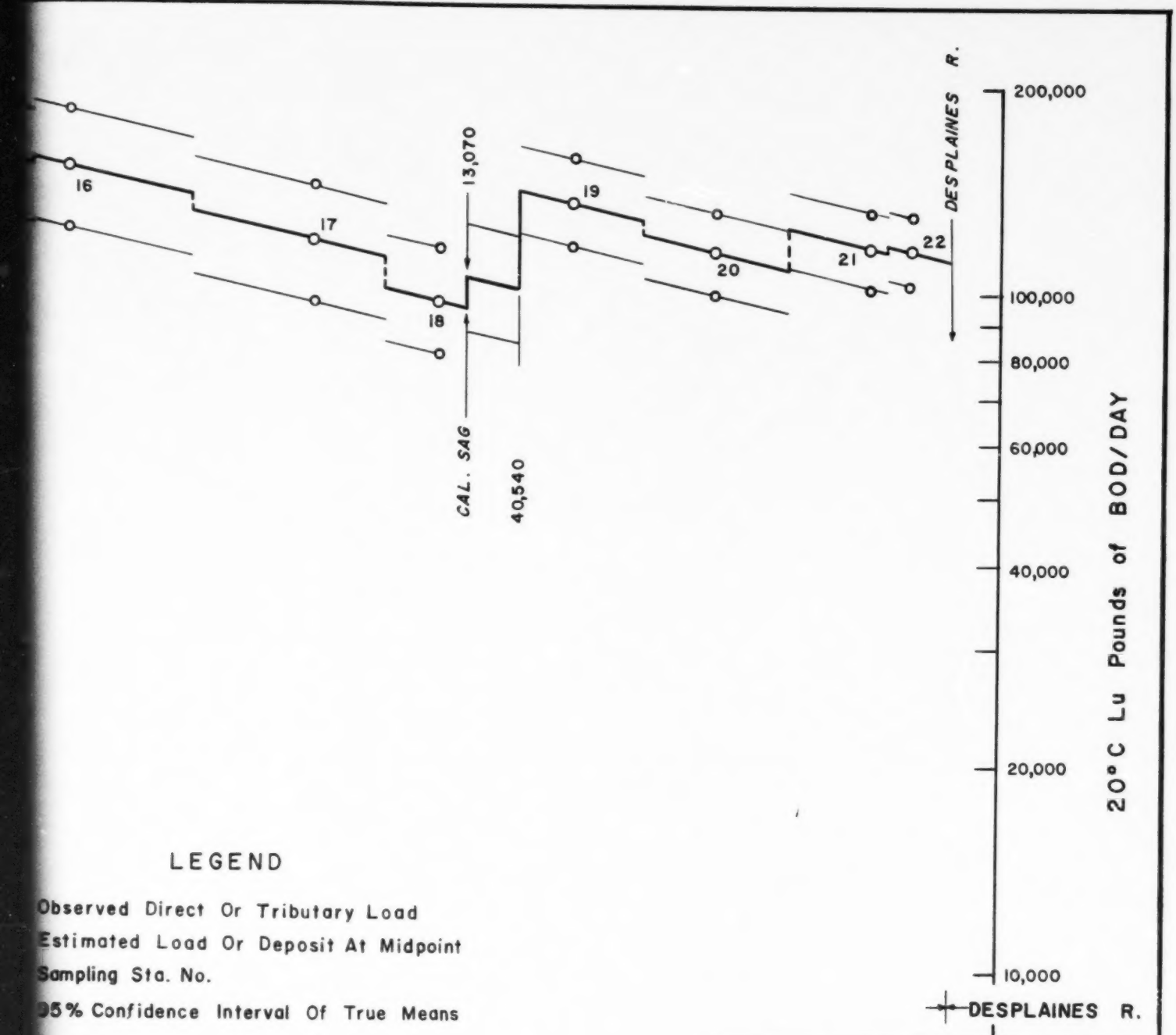
|	Observed Direct Or Tributary Load
¦	Estimated Load Or Deposit At Midpoint
O20	Sampling Sta. No.
—o—	95% Confidence Interval Of True Means

S. BRANCH — S . & . CANAL

1.5 2 2.5 3 3.5

OF TRAVEL DAYS FROM NO. 1 DOWN MAIN STEM

68a P



LEGEND

Observed Direct Or Tributary Load

Estimated Load Or Deposit At Midpoint

Sampling Sta. No.

95% Confidence Interval Of True Means

. CANAL

3 3.5 4

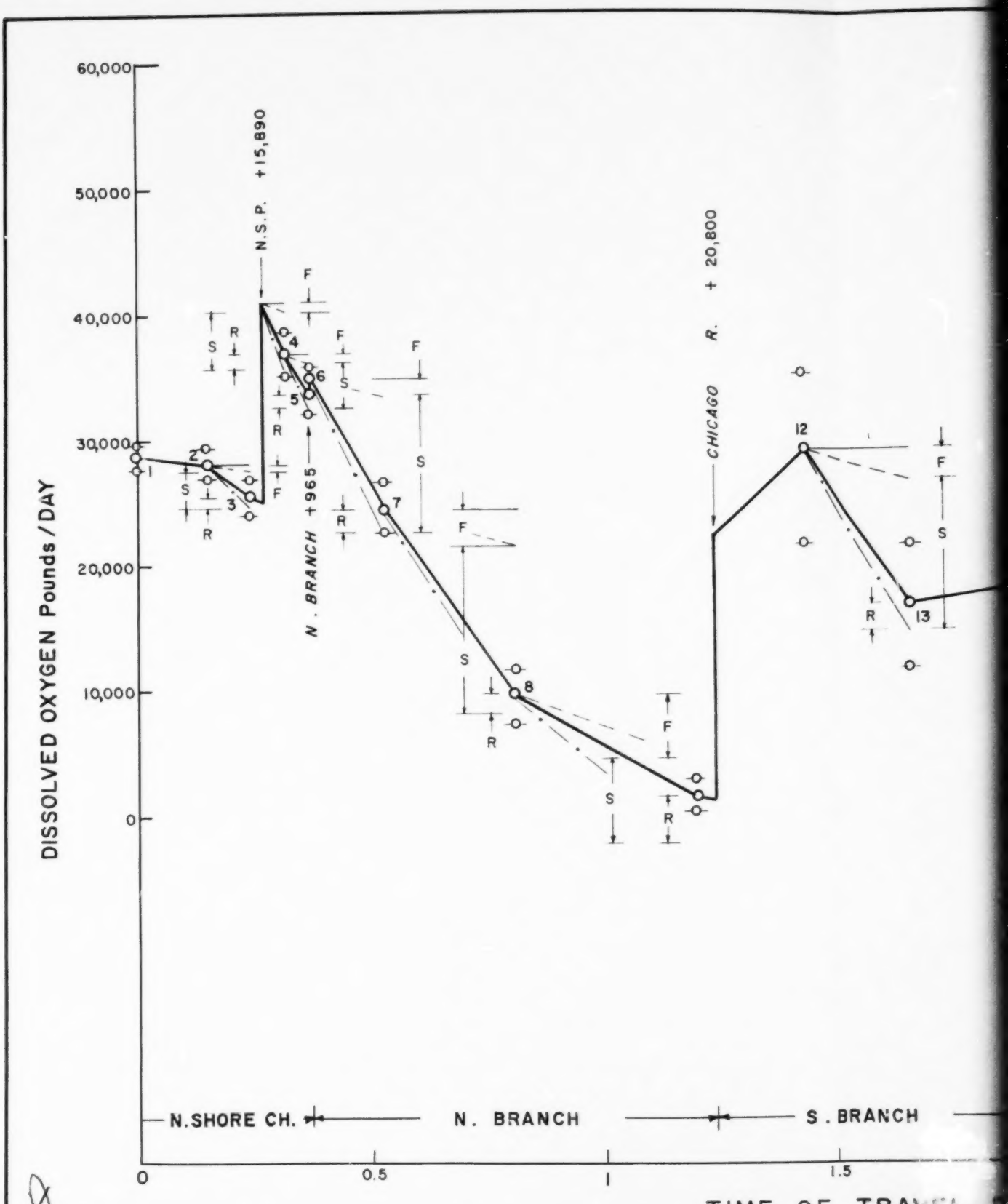
N STEM

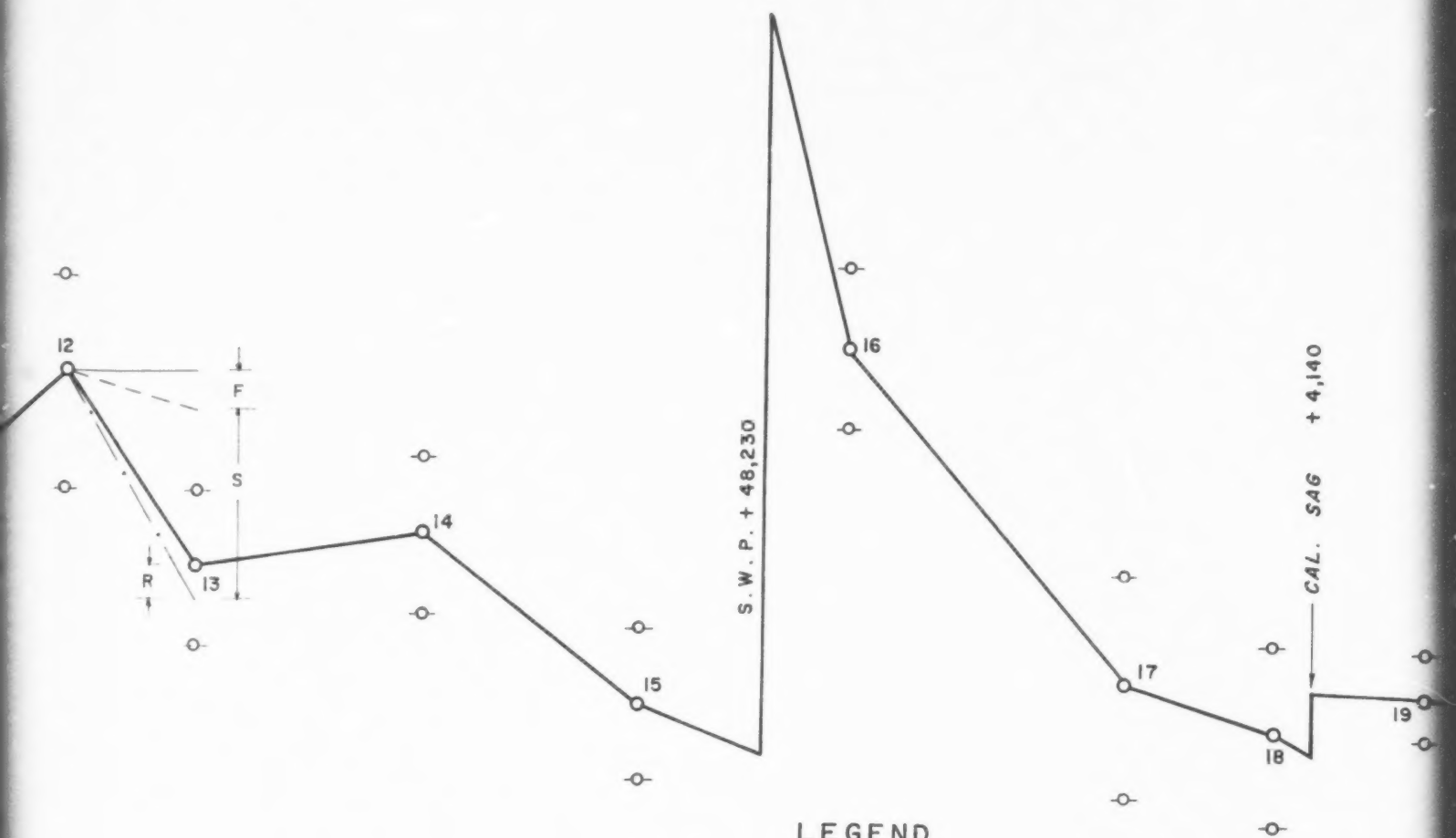
GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

INTEGRATION OF POLLUTION LOADS
August, Study Period — 1961
UPPER ILLINOIS RIVER BASIN

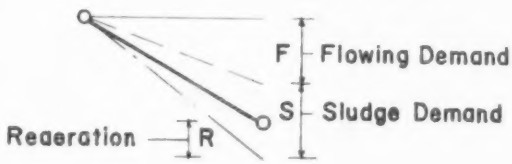
DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE IX-5


60,000
50,000
40,000
30,000
20,000
10,000
0
DISSOLVED OXYGEN Pounds / DAY
N.S.P. +15,890
N. BRANCH +965
CHICAGO R. + 20,800
1
2
3
4
5
6
7
8
12
13
S
R
F
N.SHORE CH.
N. BRANCH
S. BRANCH
0
0.5
1
1.5
TIME OF TRAVEL



LEGEND



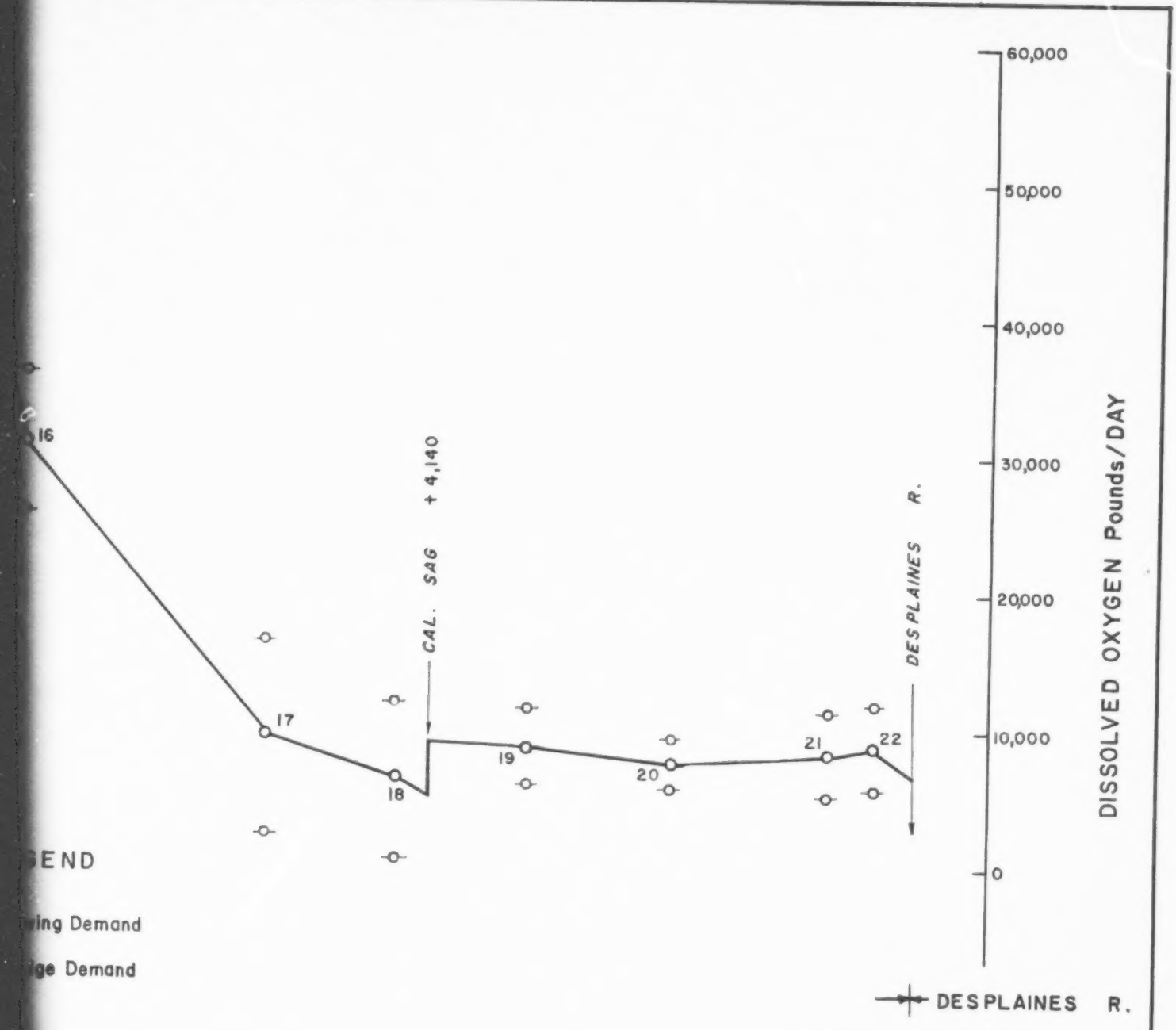
○20 Sampling Sta. No.

⊸ 95% Confidence Interval Of True Means

S. BRANCH — S. — S. — S. CANAL

1.5 2 2.5 3 3.5

OF TRAVEL DAYS FROM NO. 1 DOWN MAIN STEM



GREAT LAKES & ILLINOIS RIVER BASINS PROJECT

MEASURED DISSOLVED OXYGEN
August, Study Period —1961
UPPER ILLINOIS RIVER BASIN

DEPT. OF HEALTH, EDUCATION & WELFARE
PUBLIC HEALTH SERVICE
REGION V CHICAGO, ILLINOIS

FIGURE IX-6